

A
Compleat TREATISE
OF THE
Gravel and Stone,

With all their
Causes, Symptoms and Cures,
Accounted for.

To which are added,

PROPOSITIONS demonstrating that the STONE
may safely be dissolv'd, without any De-
triment to the Body; drawn from Reason,
Experiments, and Anatomical Observa-
tions.

By NICHOLAS ROBINSON, M. D.

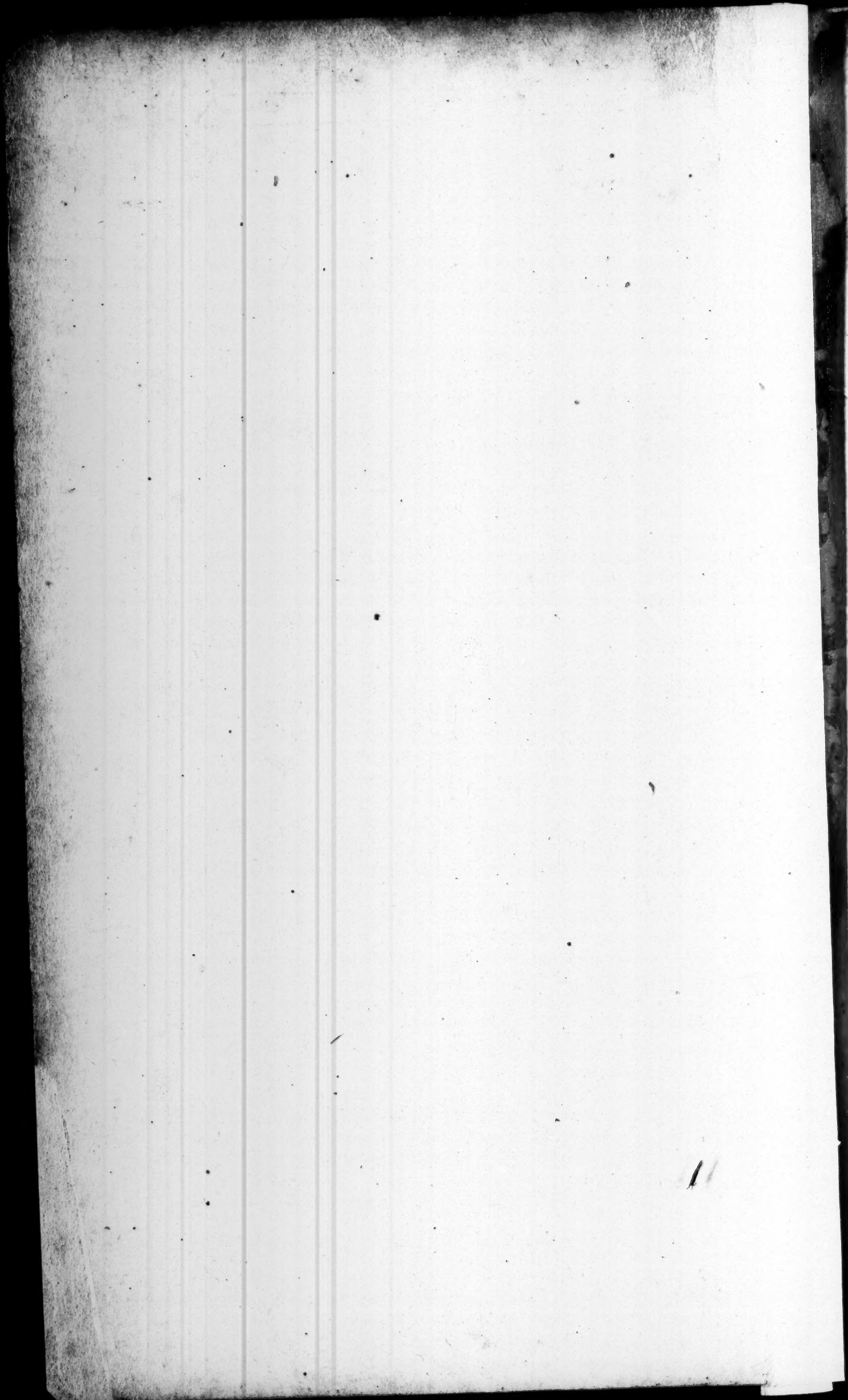
Neque enim credunt, posse cum scire, quomodo Mor-
bos curare conveniat, qui, unde hi sint, ignoret.
Præfat. Lib. I. Corn. Cels. Pag. 4.

Morbos autem, non Eloquentia, sed Remediis curari,
Ibid. Pag. 10.

The SECOND EDITION, with large
ADDITIONS.

L O N D O N:

Printed for B. Cowse, in St. Paul's Church
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hill. 1723.





P R E F A C E.



AS the First Edition of this Book met with a favourable Reception from the World, so, I hope, the Corrections and Additions I have made in this Second, will render it not less acceptable to the Reader: For besides the Emendations in the Body of the Book, I have added several Cases which came under my Inspection, since I finished the former Impression.

*A M O N G all those Arts and Sciences that conduce most to the Support of Mankind, I know none more deservedly honoured, than this of Physick; whether we consider the Dignity of the Subject it has for the Object of its Studies, which is the Contemplation of the Structure and Mechanism of that most noble Creature M A N; or the End
it*

PREFACE.

it proposes, viz. To restore his lost or impair'd Health. Certain it is, that, for many Ages, it has been in most high, and reverend Esteem, not only among all Civiliz'd Nations, but even in the most Barbarous Countries, where the Sense of Humanity was not quite extinct.

IT would be an endless Task, should I recite the Names of all the Kings, Princes, and Philosophers, that, either, themselves, have writ upon the Subject of Physick, or, at least, very much favour'd the Profession. Dispensatories still retain the Names of Medicines, compos'd by Princes of the highest Dignity. Methridate, so call'd, from Methridates, King of Pontus: Mesue, Son to Abdalus, King of Damascus, compos'd the Phylonum Persecum. Sabor, King of the Medes, records several Compositions. Evax, King of the Arabians, writ a Treatise upon the Virtues of Simples, and dedicated it to the Roman Emperor Nero. And, Avicen, that great Master of Physick, was an Arabian Prince. But, to leave the great Ones of this World

PREFACE.

World, our Blessed Lord and Saviour is an illustrious Example in Favour of Physick, who was pleas'd to honour this Profession, above all others, in executing the Office of a Physician, and relieving the Sickneses and Infirmities of the Body, as well as those of the Soul.

Seeing, therefore, we have so many illustrious Examples, in Favour of this most noble Art; let us use all Diligence, that we act nothing unbecoming the Dignity of our Profession, or, that may any Ways expose it, to the Malice and Contempt of self-designing Men.

I am very well appriz'd, that Truth, scarce ever yet, at its first Appearance in the World, met with a favourable Reception; and, therefore, I am not to expect, but that this Discourse will encounter Opposition. This was the Fate of those Worthies of the Last Age, viz. Hervey, Willis, Lower, Sydenham, who, notwithstanding their great and useful Labors, could not skreen their Characters from base and scurrilous Pens.

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I HAVE

PREFACE.

I HAVE heard it confidently asserted, that, let a Gentleman be never so well grounded in the Mathematicks, and understand his Compass to Perfection; yet, unless, by Experience, he reduce those Rules to Practice, he will ever be liable to dangerous Hazards; and, cannot, without great Danger, be intrusted with the Guidance of a Ship, from the Harbour to any distant Port: Which is a strong Argument, That, tho' the Theory be absolutely necessary, to qualify a Gentleman in the Speculative Knowledge of any Art; yet, Experience is the great Master, that must compleat him in the Practice. Nor, does this Argument hold more strongly, in any Art or Science, than this of Physick; for let a Physician read all the Physical Authors in the Globe, and understand the Rules of Cure never so well, yet, unless he converse with the Sick and Diseas'd, he will still be a Novice in the Practice and Application of sutable Remedies.

PREFACE.

IT is none of the least Misfortunes that Physick labours under, that we have been so strongly attach'd to the Interests of the Antients, as not to give Way to Truths, when advanc'd by modern Discoveries. Certainly, in former Ages, there were those that were Ornaments to the Profession, and justly deserving of the highest Encomiums for their indefatigable Labours. Yet, the great Esteem we pay their Memories, tho' well grounded, must not oblige us blindly to follow all their Dictates. We have Reason to believe, that as there were Masters of Physick, and those that justly deserv'd the Title of Physician; so were there Scholars, some of whose Works have been handed down to us, tho' not deserving that Care that hath been taken in their Preservation. Indeed, where I find them agree with Reason and Experience, there I close with their Sentiments, and pay a just Deference to their Judgments: Otherwise, I always preserve a Freedom of

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Will,

PREFACE.

Will, to reject what I think not well grounded, according to that Adage.

Laudamus Veteres, sed nostris utimur
[Annis.

THE Task I have here undertaken, is, of all others, in Physick, the most difficult to handle, accompanied with Symptoms the most dreadful and distracting to the Body, and most commonly, if not timely prevented, attended with Effects most fatal to the Constitution. The miserable Lives of many worthy Gentlemen, whom I beheld daily groaning under the Burthen of this insupportable Calamity, inspir'd me with Resolutions, to attempt the best I was able for their Relief. And, I will be bold to say, that, if the Rules I have here laid down, be but punctually observ'd, and strictly put in Practice, many will receive, not only great Benefit, but entire Cures. And, in those whose Constitutions are much impair'd, and worn out, by the Violence of Nephritick Paroxisms, and, that, therefore, a Cure is less

PREFACE.

less to be expected; yet, a Palliation of the Symptoms, even in them, will be no inconsiderable Advantage, under such dismal Circumstances.

IN the whole Management of this Discourse I have couched all Things in that exact Order, and Regularity, that I might, neither, give Umbrage to illiterate Quacks, with their Emperical Remedies, to delude the Patient; nor, have I so far prostituted the Secrets of the Art, as to make the Patients themselves Judges of the Application of Remedies, in Point of Cure.

NOT, that, by this, I would here be understood, as if I design'd to limit my Practice solely to the Cure of the Stone. No! My Studies have equally been applied to the Cure of all Diseases, and, I might as easily have writ upon the Subject of any other Distemper, as this of the Stone; but, being willing, after some Experience, to give the World a Demonstration of my Abilities to Practice, I selected this, both, because it

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was a general Distemper, and very afflicting to the Body, and, because little or nothing had been attempted upon it before, after the Manner I have treated it.

CERTAINLY, to those that suffer under the Tyranny of the Stone, this Discourse is of the last Importance; for it highly concerns such, to have all the Assistance that is possible to be had from Medicine, before they submit to that extreme, and, sometimes, fatal Operation of Lythotomy.

*Cuncta prius tentata; sed immedicabile
[bile vulnus
Ense recidendum. — — —*

Ovid. Met. l. 1. fab. 6.

*THE Importunity of Friends is generally the Apology Authors make for the Publishing of their Works. This has no such Advocates to plead for it; for, scarce a Friend was appriz'd I had such a Manuscript, before it was under the Direction of the Printer's Hand. The
Good*

PREFACE.

Good and Benefit I owed to my Country, both as a Man, and a Christian, were the only Motives that prevail'd with me to publish it.

TO conclude, Tho' it is the avowed Declaration of most People, (be their Views never so clandestine,) that their Designs are entirely levell'd at the Good and Welfare of others; yet, every one, that are proper Judges, must be very sensible, that, Self-Interest might have been much better supported after another way, than what I have taken. And I only intreat the courteous Reader, (as my Affairs would not always permit me to visit the Press,) to make favourable Allowances for humane Infirmities, lesser Errors, and Mistakes, which, in so much Variety of Argument and Citation, upon so difficult a Subject, might not, unreasonably, be supposed to escape the greatest Care.

Aldersgate-street,
London, June 10,
1721,

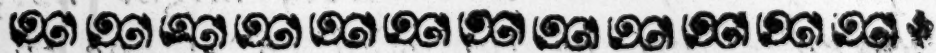
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P R E F A C E



E R R A T A.

PAge 6. line 21. dele Concer. p. 20. l. 7. read Suc-
centuriatæ p. 24. l. 12. r. precipitate, ib. distil. p.
27. l. 10. r. quæ p. 34. l. 17. r. Putredine, ib. l. 21. r.
Putredine, ib. l. 26. r. do. p. 47. l. 28. r. Dr. Slare. p.
48. l. 5. r. Hydrostatic. ib. l. 11. r. commended. p. 75.
l. 4. r. Indicandam. ib. l. 15. r. mæstæ. p. 99. l. 5. r.
ingenquously. p. 111. l. 6. r. si enim sectus fuerit Fugæ
spes est, sin minus. &c. p. 119. l. 15. r. do. p. 162. l. 9.
r. are. p. 163. l. 14. r. fixi. p. 165. l. 16. r. cuique. p.
175. l. 15. r. fiat. p. 206. l. 2. r. ad. ib. l. 14. r.
Crassiores.





TO
William Cole, Esq;

TREASURER TO
St. Thomas's Hospital,
Southwark.

SIR,

I SHALL make no
other Apology
for my address-
sing this Dis-
course to you ; but, that, if
A 2 I had

The DEDICATION.

I had known a Gentleman of more consummate Wisdom and real Worth than your self, you should not have had the Trouble of it.

Y O U have, S I R, given to the World the greatest Demonstration of your disinterested Fidelity, in the Management of those Affairs the *Publick* have been pleas'd to commit to your Trust.

IT is our Unhappiness, that among all the late Managers of our Publick Affairs,

The DEDICATION.

fairs, there was not a Gentleman of your steady Courage and Resolution, to stem the Course of that Torrent, which, as a Deluge, bore down the Wealth and Credit of the Nation.

Go on, SIR, to finish those great Undertakings you, now, have in Hand, for the Support of the Distressed and Miserable, and may you, always, by your singular Vertues, merit the Esteem of all those Worthy Patriots, who truly endea-

The DEDICATION.

your the Welfare of our
Country.

IT has always been my
Opinion, that, Books, in any
Art or Science, are most pro-
perly presented to those
Gentlemen, who, we sup-
pose, are competent Judges
of the Subject we write up-
on ; and your great Know-
ledge and Experience in Af-
fairs of this Nature, suffici-
ently enables you to make
an exact Judgment of the
Discourse, I offer to your
Consideration.

IT

The DEDICATION.

IT is none of the least Misfortunes I encounter with ; that I have undertaken a Task, I am no ways equal to, and, therefore, should have been much better pleas'd, if some Gentleman of more consummate Learning and Experience had thought proper to engage on this Subject.

I AM not insensible, that an Attempt like this, to demonstrate the Defects of the learned World, requires a

A 4 Soul

The DEDICATION.

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A 4 Soul

The DEDICATION.

Soul clear of those Prejudices that have misguided the Prospects of other Mortals.

IT is true, SIR, The Diffolution of the Stone by Medicine, has for a long time been exploded as impracticable ; Tho', I must confess, I never yet could come into that Notion. I always was of Opinion, that no Distemper was incurable, and that only our Ignorance of the Causes made some more difficult to handle than

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than others : But, that, if we could see into the Original Spring of the most obstinate and stubborn Maladies, we should then find them as tractable and easy to cure, as those that lie more obvious to our View.

IN Confidence of these Sentiments, I have undertaken the Cure of the Stone, and endeavour'd to demonstrate how it may safely be dissolv'd, without any Detriment to the Body ; and if my Notions, upon this Sub-

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Subject, be agreeable to the Sentiments of Wiser Judges, I have my Desire, if not, I cannot help it, I am not the first that have fail'd in his Attempts.

It must be confess'd, that, to oppose a single Opinion to the collected Force of so many great Men's Judgments, and in an Age so fruitful in Discoveries, and to be the first, that explores this untrodden Path, looks like the Hero in the Play, who himself alone fights

The DEDICATION.

fights and routs whole
Thousands. Yet, I per-
swade my self, that if the
Positions I have here advan-
ced in Defence of a Dissol-
ution of the Stone, be
brought to the Test of Rea-
son, the Arguments will be
unanswerable ; And, that,
tho' Envious Criticks may
cavil, and object against the
most evident Matters of
Fact, yet no Arguments are
strong against Demonstra-
tion.

BUT

The DEDICATION.

BUT, I am not so vain, as to think the following Discourse destitute of Errors, neither will I trespass so far upon your Goodness, as to invoke your Patronage of 'em ; I only hope, that other Gentlemen, after your Example, will be so courteous, as to pass them over.

I HEARTILY embrace this Opportunity, to pay you my most grateful Acknowledgements for all Favors I receiv'd from you,
and

The DEDICATION.

and do assure you, that, no
Satisfaction can be greater,
than having the Honour to
subscribe my self,

Your most

Affectionate Friend,

and most

Humble Servant,

N. ROBINSON.

The Dedication.

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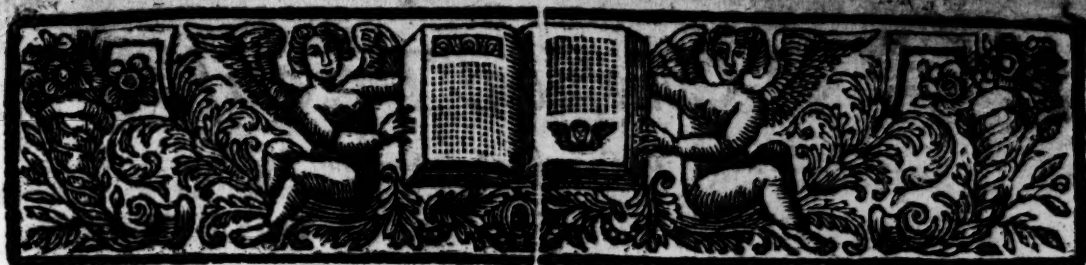
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OF THE
GRAVEL and STONE.

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S E C T. I.

A Description of the Solids.



Here is nothing more conducive to a right Method of curing Diseases, than a true Understanding of their Nature and Cause ; and therefore, I think it not needless, if before I proceed to a Description of those Maladies, I first give the Reader a brief Anatomical Relation of all the Parts that most chiefly, and immediately, suffer under their Tyranny. That, the Structure, Position, Magnitude,

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nitide, and Use of the Parts being known, every Person suffering under this Distemper, might more exactly know how it moves, in what Part it may settle, and be inform'd better how to acquaint his Physician with the Symptoms that oppress him; for without a perfect Knowledge of the Seat, not to be acquir'd without Anatomical Descriptions, as well as Cause of a Disease, we can never arrive to any rational, not to say, certain Methods in its Cure. And it's much to be wish'd that any Gentleman treating of the Nature of a Disease, would be pleas'd to favour us in the first Place, with an Anatomy of the Texture and Connection of those Parts that are most contiguous to, and that do most suffer under the Malady; for it is highly presumable, he may understand the Action of those Parts better, and be capable more accurately to enlarge upon their particular Functions, from the Disposition of his Genius leading him to discover those Distempers they are subject to. And, this, I will be bold to maintain as an undeniable Truth: That all Physicians perceive in themselves a stronger Inclination to study the Diseases of some particular Parts, more than of the rest of the Body. Many Times, the unhappy Indisposition of some one of the Family, may prove a strong Argument to provoke the Genius to this Application. The excruciating Pains and dread-

the Gravel and Stone.

dreadful Symptoms, that for several Years afflicted my Honoured Father, while he labour'd under this dolorous Malady, was the great Reason, why I so zealously endeavour'd to investigate the Cause and Cure of this so difficult and obstinate a Distemper. But to proceed, we generally hear no Complaints of any Gravel or Stone disturbing the Patient, till the Urine arrive at the Kidnies. They are in Number two, seated on each Side one, and have almost the same Figure with Kidney-Beans, save that they are more Ovicular, and less flat. From their Resemblance to Kidney Beans they receive the Name Kidney. The Right is plac'd between the Liver and Muscle *Lumbaris* on the Right Side, the Left between the Spleen and the same Muscle on the Left Side, which in Man is something higher than the Right. They are commonly about five Inches long, three broad, and one and a half thick. The Right Kidney lies under the Liver, the Left under the Spleen, both between the Duplicature of the *Peritoneum*. They have two Membranes, the one common from the *Peritoneum*; the other proper from the Exterior Coat of the Blood-Vessels. They are cover'd with much Fat, by some call'd *Tunica Adiposa*, tho' not so much as Quadrupedes; and the ingenious *Drake* thinks, the Reason why Brute Animals abound more with Fat in those Parts than Man, is owing to the

Descripti-
on of the
Kidnies.

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Horizontical Position of the one, and the Perpendicular or Erect Posture of the other : But how the different Position of Bodies, should occasion the Attraction of a greater Quantity of Fat about the *Membrana Adiposa* of the one, more than of the other, in my Judgment is not easy to comprehend. I rather am of Opinion, that the All-wise Providence made this Difference in the first Formation ; and dispos'd the lesser Quantity to the Kidnies of Rational Animals, to preserve their tender Membranes from too much Heat, which they would, in all Probability, have been more subject to, had they been loaden with much Fat : And daily Experience assures us, that the Kidnies, as well as any other Bowel of the Body, are subject to Inflammations. By their external Membrane they adhere to the Loins, by their Blood-Vessels to the *Aorta* and *Cava*, and by the Ureters to the Bladder. The Right is sometimes connected to the *Intestinum Cæcum*, and sometimes to the Liver : The Left to the Colon and Spleen. In a *Fætus*, their Exterior Substance is divided into several Lobes, laxly joyned together, which in Adults become more close and compact. Their Substance is form'd of an Infinity of small Glands and Vessels. These Glands are of a round Globular Figure, and compose the outer Part of the Kidney, which is about half an Inch thick. This Part is in Colour of a darkish red, or rather

the Gravel and Stone.

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rather brown : From each of these Glands go a small Tube, which compose the inner Substance of the Kidney, and as they approach the *Pelvis* or Basin gather in little Bundles, whose Extremities piercing the Membrane of the *Pelvis*, form these little Protuberances call'd *Papilla*. The *Pelvis*, or Basin, is a Cavity in the Middle of the Kidney on its Concave Side, arising from the Dilatation of the Ureter. Their Veins and Arteries are call'd Emulgents ; the former from the *Vena Cava*, and the latter from the *Aorta*. These Emulgents springing from their respective Trunks by single Slips, divide unto two Branches each, just before they pierce the Kidnies on their Concave Side, and after their Entrance branch themselves into numberless Ramifications, which terminating in the Glands, compose the Cortical Part of the Kidney. Nerves they receive from the Intercostals, which form a *Plexus* on each Side call'd *Plexus Renalis*. Lymphæducts also may be observ'd in the Kidnies, that disembogue themselves into *Pecquet's* Reservatory. The Use of the Kidnies is to separate the Urine from the sanguineous Fluid ; which is thus done : The Pulsation of the Heart and Arteries propels the Blood with a suitable Force into the emulgent Branches, which conveys it to the minute Glands of the Kidnies, through which the more serous Part continually ouzes, and so passes, along those

Use of the
Kidnies.

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small Tubes arising from the aforesaid Glands to the *Pelvis*, from whence it descends by the Ureters into the Bladder. Now as the Blood, according to the Laws of Circulation, is continually driven against the Kidnies; so, the Secretion of the *Serum* from the Blood is continual, and the Urine is continually dribbling into the Bladder.

Glandulae
Renales.

THE *Glandulae Renales*, by some call'd *Renēs Succenturiati*, are in Number two, plac'd on each Side one, wrapp'd up in some Fat. The Right is commonly bigger than the Left, and each in Adults about the Bigness of a small *Nux Vomica*: They have the same Tunicks with the Kidnies, and are seated between the Trunks of the *Aorta* and *Cava*, a little above the Emulgent, Branches of Blood-Vessels they receive from the *Vena Cava*, *Aorta*, and sometimes from the Emulgent themselves. Nerves they have from the *Plexus Renalis*. They have a proper excretory Duct. Concerning their Use, Authors are not well agreed, some, and with the best Reason, think they separate a Liquor, which in their Cavity is always of a dusky Colour, inclining to Black, which serves to dilute the over thick Blood, in its return from the Kidnies.

Of the
Ureters.

THE Ureters are two in Number, being small long Pipes, which arise from the Basons
of

of the Kidnies on each Side; and descending in the Form of an Italick *f*, pierce the Bladder, near its Neck, with oblique Insertions. They are seated between the Doublings of the *Peritoneum*, and have three Coats: The first from the *Peritoneum*; the second is Muscular; the third Nervous, and is lin'd with numberless small Glands which separate a Mucous, to defend it against the acrimonious Salts of the Urine. They receive Veins and Arteries from the *Vena Cava* and *Aorta*; and Nerves from the Intercostals and *Vertebrae* of the Loins. The Diameter of their Cavities is commonly, equal to the Bigness of a Goose-Quill, tho', sometimes, we find by Dissections, that they are much enlarg'd, from the Distention they suffer in Calculous Cases, to an almost incredible Magnitude. Their Use is to be a Conduit to the Urine, in its Passage from the Kidnies to the Bladder. Their Obstruction will cause a Suppression of Urine, and either being affected, will excite a Strangury.

THE *Vesica Urinaria*, or Bladder, being Of the the Receptacle of Urine, is seated in the Ca-Bladder, vity of the *Abdomen*. In Men, immediately, resting upon the *Intestinum Rectum*: In Women upon the *Vagina Uteri*: In both, between the Duplicature of the *Peritoneum*. It adheres to the Navel by the *Urachus* degenerated into a Ligament. Its Neck in Men is firmly tyed to

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the *Rectum*: In Women to the *Vagina Uteri*: And in both to the *Os Pubis*, by Means of the *Peritoneum*. It consists of three Membranes; one common, which is its outermost, deriv'd from the *Peritoneum*: The middle, which is a Muscular Membrane, is compos'd of Carnous Fibres running longitudinally, which intersect others irregularly dispos'd a-cross them: The third is Nervous, and is lin'd all over with an infinite Number of small Glands, which separate a Mucous, to defend it against the Acrimony of the Urine; and some will have this to be a fourth Coat. At the Neck of the Bladder, to prevent the continual Dripping out of the Urine, is plac'd a Muscle call'd *Spineter Vessicae*, consisting of Circular Fibres, which keeps the Bladder constantly clos'd, and is only open'd by a Contraction of the Abdominal Muscles, which compressing the Bladder forces the Urine out. Adjoining to the Neck of the Bladder is the *Meatus Urinarius*, or *Urethra*, its excretory Pipe for the Urine to pass out at, which is much shorter in Women than in Men. This Instrument, I confess, hath another principal Use, but that not being to my Purpose in this Treatise, shall forbear its further Description. The Bladder and *Urethra* have Veins and Arteries from the *Epigastricks*, and *Iliacks*, and Nerves from the two *Plexus's* of the *Pelvis* of the *Abdomen*, form'd out of the *Par Vagum* and the Nerves
of

the Gravel and Stone.

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of the *Os Sacrum* united. The Use of the Bladder is to retain the Urine, as it is separated in the Kidnies, that it may not involuntarily pass from us. The *Urethra* is lin'd with an infinite Number of small Glands, which separate a Mucous Matter, to fence its tender Membranes against the acrimonious Salts of the Urine.



S E C T. II.

Of the Nature of the Urine.

HAVING in the former Section briefly and succinctly describ'd the solid Parts that suffer under this most painful Malady of the Stone, and which are destinated by our Parent Nature, for the Separation, Secretion, and ultimate Perfection, of the Urinous Fluid. I think it will not be a needless Digression, if I lose two or three Pages in a Consideration of the Nature and Qualities of the Urine it self: Since its good or bad Disposition is of such mighty Concern to the well or ill being of the Human Fabrick; that very often a Depravation of this Fluid alone, shall give more Disturbance and Pain to the Parts, and induce more Evils to the Constitution, than any Fluid besides is capable

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capable of producing in the Body. But, I suppose none will expect from me a compleat History of Urines: To run over the several Differences, the Quantities, Qualities, Colours, the Parts composing it, the several Designations and Prognosticks, Authors, in most Diseases lay down about it, would require more Leisure than I have to spare, and be a Digression from my present Business: They that are desirous of seeing such a compleat History, may consult the famous *Bellin de Urin. & Pulsb.* whose Writings are very copious upon the Subject of Urines; my Intention being only to consider it, as far as it may conduce to the Design I am upon.

Original
of the U-
rine.

IF we trace back the Urine to its Original, and examine its first Being in the Body, we shall find it inherent in our Aliment, tho' under another Form, and to be only the more aqueous Parts of the Chyle, as the more dreggy afford Excrements of a grosser Nature. For such as the Aliment is, such is the Chyle, and such as the Chyle is, such is the Blood; and consequently the Urine, being separated from the Blood by the Glandulous Pores of the Kidnies, must partake of the same Qualities, unless an Errour in the Digestion hinder, and then the best Aliment may be perverted so, as to produce the worst Nourishment; from whence innumerable Diseases arise.

When

the Gravel and Stone.

II

When the Chyle is well digested in the Stomach, and protruded into the Intestines by the Compression of the Abdominal Muscles, and the Pressure of the Diaphragm, its more fine, tenuous, subtle Parts are admitted into the most minute Orifices of the Lacteal Veins, (the Pressure of the aforesaid Muscles assisting thereto,) which are divided into *Vena Lactea primi & secundi generis*, and is press'd forwards to the *Receptaculum Chyli*; but in its Passage several Lymphæducts disembody themselves to attenuate and dilute it, that it might not stagnate in the Milky Vessels. From the *Receptaculum Chyli* it ascends the *Ductus Thoracicus*, where having got into the Breast, it runs a little Way, and empties into the Subclavian Vein, and so marches by the *Vena Cava* directly to the Right Auricle of the Heart; where circulating through both its Auricles and Ventricles, by the intermediate joining together of the *Arteria Pulmonalis* with the *Vena Pulmonalis*, it is by a strong Contraction of the Musculous Fibres of the Left Ventricle, driven into the *Aorta*, and so by the Arteries is convey'd to all the Parts of the Body for their Nourishment; where it is separated and secreted according to the Conformation of the Parts, and Configuration of the particular Glandulous Pores it passes through. And, here, give me Leave, to digress a little in discoursing upon the Structure of the Glands of the several

Passage of
the Chyle
into the
Blood.

Circulation of the
Blood
thro' the
Heart.

Structure
of the
Glands,
and Na-
ture of Se-
cretion.

ral Parts. Since in the whole Frame and Constitution of the Machine there are such an Infinity of Glands, and those of different Magnitudes and Configurations, for the carrying on the Laws of Secretion, it is necessary that the Dimensions, Size, and Figures of the several Juices to pass them, be exactly agreeable to the Structure of their different Ducts, otherwise the Particles of the Blood may give a Justle against those Parts they are sent to, but can never insinuate themselves as Nourishment to the Constitution: Not that I believe that the Blood closes with the Porous Glands in its first Circulation; but after repeated Vibrations, its Particles being resolv'd and fitted to the Pores of the Glands, is then receiv'd, the rest returning by the Veins to the Heart acquires new Heat, and so is receiv'd by other Glands, into whose Pores it is better fitted to enter. And tho' some ingenious Gentlemen have been pleased to assert, That all the Glands of the Body are of the same Make, and that their excretory Ducts are of the same Figure, only that there are some Difference in their Bigness; some being greater, some lesser, and consequently capable of admitting a greater and smaller Corpuscle of Matter, according to the Dimensions of their Magnitude, not their Figure: But I shall ingeniously confess I cannot prevail with my Reason to join Issue with this Opinion: For
tho'

tho' I believe all the conglobate Glands of the same Make, and to be nothing but the Endings of the Veins and Beginnings of the Arteries with a little Protuberance circumvoluted, yet I believe that this Circumvolution determines the different Mode or Figure of every particular Gland, according to the several Liquors to be secreted, and the Use those Liquors are destinated for; hence we see different Fluids equally of the same Consistence, as to Tenuity, secreted by Glands whose excretory Ducts most certainly were of a different Figure, as well as Greatness, or else those Glands of different Magnitudes might have admitted the same Liquors to pass their excretory Ducts, tho' not equally, and consequently we must have had a Mixture or Confusion of the several Juices of the Body blended together, tho' destinated for different Uses; which Homogenous Manner of Secretion, were it Ab-
admitted, must render the Constitution liable ^{ness of a} to great Disorders without any Possibility of ^{Homoge-} Redress. Thus the Glands of the Brain might ^{nious Se-} have secreted the more fine Parts of the Uri-
nous Fluid equally with the Animal Spirits; which Fluid also might have given a greater Saltness to the *Saliva*, by entering with it the *Ductus Salivales*, and what Alterations might be made in several other Fluids of the Body, by admitting such a confus'd Manner of Secretion, shall be left to the Consideration of
Gen-

Gentlemen of more superiour Judgments. But
 Manner of the Secretion of the Urine from the Blood in the Kidnies. to proceed, the Blood in its Circulation coming continually to the Kidnies, Part of its Serosity is separated by little small Glands, and the Blood frequently rushing against those small Glands, is as frequently taken up by them. The Fluid of the Urine being thus separated and secreted, passes on by Vessels whose Beginnings are most minute, and, increasing in Bigness as they approach the *Pelvis*, deposit the Urine in the aforesaid Bason; from whence it descends by the Ureters into the Bladder, and is there detain'd until such a Quantity is amass'd, as may protrude the Sphincter Muscle of the aforesaid Bowel, by the Force or Compression of the Abdominal Muscles, and Command of the Will, to make its Exit. In the Separation of the Urine from the Blood in the Kidnies, all the Principles of the Blood are separated, tho' not equally: For in this Secretion there is much Volatile Spirit, an acid Salt, some Sulphur, very little Oil, a little fix'd Salt, which is converted into its earthy Sediment. The Basis of the Urine then may be said to be a pure Elementary Water strongly saturated with Sal Armoniack, which contain all the aforesaid Principles. Its Colour of the Urine not from the Bile, as vulgarly supposed. Redness or Citron-Colour has been suppos'd by some to proceed from the Bile, but I look upon it rather to be the Natural Product of its Secretion, and is nothing else but the more fine

fine Parts of the Blood. The ingenious *Bel-
linus*, in his Treatise of Urines, proposes an
excellent Experiment to prove that the Bile
is not concern'd in giving Colour to the Urine;
a Transcript of whose Words, I think, will
not in this Place be improper: " Si igitur
" Urinæ Color a Bile provenit, quæ, propter
" aquam admistam, amaritudinem suam non
" prodat; evaporata aqua, saporem amarum
" proferet, qui eo fiet intensior, quo major
" ac major fiet evaporatio; quod tamen fal-
" sum esse exposuimus superius, atque ita fal-
" sum, ut sedimentum ipsum ab omni fere
" aqua separatam, sit quidem falsissimum, sed
" ne cum ullo quidem vestigio amaritudinis
" conjunctum, nec per totam evaporationis
" seriem, quicquam Amaritudinis Urina con-
" cepit." Thus he, and very often the Pale-
ness or High-colouredness of the Urine does
chiefly depend upon the Closeness or Laxness
of the *Compages* of the Renal Glands; for I
have observ'd many Times in Bodies worn out
with long Fevers, the Medicines come away
by Urine little alter'd from what they were
when first taken, which strongly argu'd that
all the natural Digestions, the Tone of the
Viscera, the *Compages* of the Renal Glands,
were greatly weaken'd and vitiated. In re-
spect of the Quantity of Urine, many will
have it wholly to depend upon a Dissolution
of the sanguineous Texture, when the *Com-
pages*

But from
the Close-
ness or
Laxness
of the Se-
cretory
Glands of
the Kid-
nies

Analogy
between
the Sweat
and Urine.

The Cause
of a Dia-
betes.

pages of the Blood have been broken or greatly fus'd by any Accident or cruel Disease, that have dispers'd its more Spirituous Parts: But tho' this might happen, and frequently does, yet is it not always an impoverish'd Blood that sends out the most Urine; for many Times it hath been observ'd by me, that those Persons whose Blood hath greatly abounded with this Serous *Latex* have not urin'd plentifully; for if we consider the Analogy between the Sweat and the Urine, and the Consent and Agreeableness there is between the Glands of the Kidnies, and those of the *Cutis*, as to the Configuration and Structure of their several Orifices, we shall not wonder if those that sweat much, urine little, and *vice versa*, the Reason of which Harmony in Secretion does consist in this; That the Vessels of the Kidnies are so close and compact, and the Blood at the same time so impoverish'd that the Spirits cannot invigorate it, with a Force sufficient to pass the minute Glands; and the Cutaneous Glands being more lax and open, does suffer the greatest Part of the Fluids to pass off by Sweat and insensible Perspiration.

But in a Diabetes which is caused from a Dissolution, or over-great Fusion of the Blood, the *Serum* is carried off, by the Renal Glands, in such prodigious Quantities, as is almost amazing, and very often (notwithstanding the best Means used for the very Recovery of the Patient)

Patient) never leaves him; 'till Death puts an end to both his Life and Distemper, together. And, what adds to the strengthening this Opinion of the Analogy, between the Cutaneous and Renal Glands, the more, is the frequent Observations I have made upon Persons, whose Hands and Feet have been much addicted to Sweating, who would many times complain; that they made but little Urine, tho' they had no other Reason for such their Complaints, but the Fear and Dread they might have the Gravel, tho' no manifest Symptoms indicated any such Thing. Besides, if we consider the Nature of the *Serum*, which gives fluidity to the Blood, and, without which, it could not exist in Motion, nor pass those minute Vessels, necessary for the nourishment of the Parts; we shall find, (when it is extracted from the Body, in those Diseases that indicate Phlebotomy necessary, and by the Nitroaerial Particles of the Air, separated and combin'd more intimately together) the *Serum* much of the Consistence, Colour, and Taste of the Urine, and in some Measure to have a Urinous smell, tho' not so foetid as the Urine it self; which defect of Smell might proceed from its not being contain'd long enough in the Body, and it's not having pass'd those various Circulations and Secretions, necessary for the Perfection of the Urine, and a little Reason will demonstrate,

Nature of
the Serum

The O-
dour of
Urine not
from a
proper
Ferment
in the
Kidnies.

* *De Diure-*
fi & Medi-
camentis di-
ureticis,
Seci. 4.
Cap. 1.

Ibid.

what a Difference in Taſt and Smell, Glands of different Figures, will communicate to thoſe Liquors through which they paſs. Some Gentlemen have ſuppos'd the Odour or Smell of Urine, to ariſe from a proper Ferment lodg'd in the Kidnies. This Ferment is particularly taken notice of by our ingenious Country-man Dr. *Willis*, ſo his Words run,

* “ Alique Fermentum quoddam in Renibus ſtabulari autumant;” and a little after,
“ Atque rem ita quadantenus habere viſceris hujus Odor, & Sapor rancidus, & ingratus arguere. Videntur.” And in the ſame Chapter, ſpeaking of the Percolation of the Blood thro’ the Kidnies, he uſes theſe Expreſſions,
“ Et quidem, Renes tali Fermento lixiviali imbui, ſatis conſtat ab eorum carnibus in eſcam, paratis, quæ propterea, & Saporem, & Odorem valdè rancidum & ingratum habent: So far he. And now, let us a little conſider upon what Reaſons he ſupports the Nature of this Ferment, and to what End he deſigns it ſhould ſerve. He ſuppoſes not that it gives any change to the *Serum* percolated thro’ the Glands of the Kidnies, or that every Strainer of thoſe Bowels, is endued with a proper Ferment, as is the Opinion of ſome; ſo his following Words, “ Ex his conſtat Serum a Sanguine Percolatione quadam in Renibus ſecerni, pari quidem Ritu ac cum idem ex Arteriis paſſim in Glandulas pro Lachrymarum, Salivæ, Naris Stilli-
“ cidii,

“cidii, aliarum que Excretionum Materia de-
 “ponitur.” He supposes that the Secretion
 of the *Serum* in the Kidnies, is performed af-
 ter the same manner as the *Glandule Lacryma-*
les Salivales, &c. Deposit their several Li-
 quors for Excretion. To what end then
 serves this Ferment we have been speaking
 of; it is of service according to the Senti-
 ments of this ingenious Author, to help the
 Fusion of the Blood that it may not coagulate
 while it passes the Renal Glands: See his fol-
 lowing Words, “Verum, in super, oppinari
 “subest, hoc etiam Sanguinis Fusione quadam-
 “tenus fieri, nempe quod Sanguis ex sua Na-
 “tura grumofus & ad coagulandum aptus,
 “dum Renes pertransit a Fermento lixiviali
 “hujus partis fundatur plurimum & attenu-
 “etur; proindè ut Latex serofus ab eo faci-
 “lius secedat.” And a little after, “Itaque
 “Fermentum renale non, uti vulgo creditur,
 “Sanguinem præcipitat, verum a tali statu
 “quò liberius ipse circulari, atque Serum
 “ejus percolatione in debita quantitate, se-
 “cerni possit, tuetur.” Thus far he, in de-
 fence of a Ferment in the Kidnies. But if I
 may be allow’d to speak my Judgment, I am
 of Opinion, that the Urine rather communi-
 cates this rancid ungrateful Sapor to the
 Kidnies, by continually passing through their
 Glands, for, I am sensible, there is no such
 Ferment in the Kidnies, as he contends for,

Ibid.

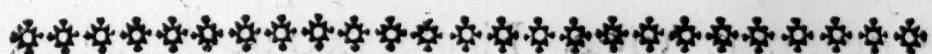
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neither is there that Occasion for it, he speaks of, *viz.* To give a greater Fusion to the Blood, whereby it may secrete more easily : and to preserve it from Coagulation in its Return from the Kidnies ; but it is the common receiv'd Opinion of all our modern Anatomists, that the *Glandula Succinturiati*, plac'd a little above the Kidnies, affords a Liquor that absolves both these Offices, and of which we have taken notice of in the former Chapter.

Difference
of Urines.

As to the Difference of Urines, that varies much, according to the particular Constitution of the Subject it resides in : so that you shall scarce find two, whose Urines, equally, and, in all things consider'd, shall be alike ; Nay, in the same Subject, Progress of Time, Alteration of Diet, and many other Circumstances of Life, may concur to make a considerable Alteration ; so that nothing certain, can be laid down, in respect of this Fluid, whereby an unerring Judgment may be fix'd, intirely to depend upon ; which hath been the Occasion of my slighting the Urinal, in some Cases, where the Urine has been offer'd to my Inspection. However, I deny not, but that in the Gravel and Stone, several considerable Prognostications may be desum'd from its Inspection, which shall be consider'd in their proper place.

S E C T.



S E C T. III.

*Of the Original Cause and Generation
of Stones in general; and the Re-
semblance they bear to those genera-
ted in Bodies.*

BEFORE I come to assign the particular Causes of the Generation of Stones in the Kidnies and Bladder; it will not be improper, if I first demonstrate, how those petrified Concretes, that are almost every where scattered thoro' this Terraqueous Globe, derive their Original; and the Affinity they bear to those generated in Bodies. Now as Water is the Original *Menstruum* of both Minerals, Vegetables and Animals; and as it is the proper Vehicle to convey the Nourishment to all that Variety of created Beings that adorn the Earth, permit me a little to consider the vast Empire, this fluid Element obtains in this Region of the Globe, and is suppos'd, by the most learned of the Ancients, to have in the superior Regions. *Pliny*, in his natural History, excellently well, describes the Power of this Element, *Lib. 31.*

Cap. 1. "Hoc Elementum, saith this great Hi-
 "storian, cæteris omnibus imperat, Terras
 "devorant Aquæ. Flamas necant. Scandunt
 "in sublime, & Cælum quoque sibi vendi-
 "cant:" And the most learned *Baccius*, in a
 Treatise he wrote of Baths, in the first Chap-
 ter, speaking of the usefulness of Water,
 goes on thus, *Caloris impetum coercit, Fomi-*
temque Vitæ temperat; and which is more; he
 thought it affords an everlasting Nourishment
 to the Etherial Element; so his Words, *E-*
ternum pabulum Etheri impartit, & quæ est non-
nullorum sapientium Sententia, Sydera pascit; and
 speaking of its Necessity, in respect of living
 Creatures, he goes on thus, *Porro si ad mortu-*
alium Rerum Usus, ac necessitatem respicias, vis
aliud reperias, sine quo aliquando vita constare non
possit, sed sine Aqua, nunquam. And, a little
 after, speaking of the Generation of all Sub-
 terrestrial Species, he subjoyns, *Infra vero*
Terræ Viscera, cæterorum Elementorum, gravi-
data Mixturis, quacunque irrigat, aut penetrat, præ-
bere Videtur speciebus Rerum Materiam ad pro-
pagationem, sic Plantæ, Aqua plurimum, nutri-
untur: semina solo Aquæ Beneficio creantur & fo-
ventur. *Plutarch* calls it, *Divinam Aquam* & *Sæ-*
neca relates. That the Egyptians gave Divine
 Honour to this Element. *Hippocrates*, in his
 first Book of Diet, expresses himself thus,
Aquam omnia per omnia nutrire idque promul-
gasse crediderim, quidquid est in Mundo, Aqua
 ado-

adolefcit, fecundatur enim Tellus ac pinguefcit. Plantæ ejus Humiditate fubfultant. Olera viriditate donantur, & tandem humanum Corpus quoquo Pæcto nutritur. I fhall conclude all I have to fay, in defence of the Univerfality of this Fluid Water, with a Tranfcript from the moft ingenious *Cardan, Viétus Regimen Aquam* Vid. lib. 1. cap. 1. de San. Tuen. *multum conferre videmus, quia molle ac fluidum reddit, folidum nutriens, & ipfum attenuat, ut leviter & cito penetrare poffet per venas & foramina, nec aliter Nutritio ex folido Cibo compleri poffet nifi coadjuvaret Aqua.*

AND now having, with the utmoft Brevity, exhibited a fmall Sketch of the vaft Influence of the Waters, and how they govern, increafe and augment all terreftrial Beings, from the Authority of the moft ancient and beft Writers: It ftill remains, that I demonftrate the Rife, Progreff, and Variety of Meanders, they make round this Maffy Globe. The grand Storehoufe of Water the Sea, is the Fountain, from whence all Springs, Lakes, Rivers, and whatfoever elfe of Humidity arifes to the Earth, derive their Being, and is to this World, as the Stomach is to the Body, affording whatfoever is not only neceffary to its well Being, but even to its very Being.

BUT the manner how it derives this Nutri-
ment to the Earth, is the main Difficulty that
has perplex'd the most ingenious of all Ages.
Some, and those of high esteem for their
deep Learning, do suppose all Springs and
Rivers to arise from the Sea, in form of Va-
pours; attracted, thence, up into the Atmos-
phere, by the Power of the Sun's Influence,
which, being driven of Winds into distant
Countreys, penetrates the Ridges of the
highest Mountains or Hills, where conden-
sing precipitates, or distils down the Cra-
nies or Chincks of those immense Rocks or
Mountains, and at the Bottom rises in a
Spring. This Opinion, that profound Ma-
thematician Dr. *Halley* supports, by an Expe-
riment he observ'd while at St. *Hellena*.

“ Now this Theory of Springs is not a bare
“ Hypothesis, but founded on Experience,
“ which it was my luck to gain, in my a-
“ bode at St. *Hellena*; where in the Night
“ time, on the Tops of the Hills, about eight
“ hundred Yards above the Sea, there was
“ so strange a Condensation, or rather Præci-
“ pitation of Vapours, that it was a great
“ Impediment to my Celestial Observations,
“ for in the clear Sky, the Dew would fall
“ so fast, as to cover, each half quarter of an
“ Hour, my Glasses with little Drops, so
“ that I was necessitated to wipe them off so
“ of-

so often, and my Paper on which I wrote my
 " Observations, would immediately be so
 " wet with Dew, that it would not bear
 " Ink : By which it may be suppos'd, how
 " fast the Water gathers in those mighty
 " high Ridges. * Thus he, now how these * Vid.
 Vapours should arise in such vast Proportions, Vol. II.
 as to keep the *Danube*, and other Rivers of Phyl.
 mighty Extent, in such a continual Prodigious Transf.
 Run, to me seems not altogether so proba- abrid.
 ble. I shall so far come into this Gentleman's
 Opinion, as to acknowledge, that those Va-
 pours being rais'd from the Sea, and falling
 upon the high Ridges of those Mountains or
 Rocks, and so descending into those Rivers,
 may considerably augment their Current, but
 cannot believe they are the sole *Pabulum* that
 feeds those Rivers with continual Supplies:
 for I might ask the Question, what becomes
 of these Rivers, when those Vapors are, for
 any considerable time, driven off from these
 Mountainous Declivities, by a turn of the
 Wind, blowing directly counter to that which
 brought them to the Land-ward; certainly,
 those Rivers ought to be considerably lessen'd,
 which, yet, I believe, few have observ'd to
 happen. The next Opinion is, of those that
 suppose all Springs and Rivers to derive their
 Original from Rain and Snow, resolv'd into
 Water; of this Opinion was the ingenious
 Dr. *Wittie*, in a Tract formerly published
 by

Vid. Dr.
Wittie
Tractat.
de Aqua-
rum Ori-
gine.

by him, *Of the Vertues of the Scarborough Spaw*, where he takes an Occasion to discourse of the Original of Springs in general, " The
 " Snow and Rain, saith this Author, falling
 " from the Clouds upon the Earth, by moist-
 " ening the Superficies, do cause it to bring
 " forth Vegetables; the remaining part (ex-
 " cept what runs into Rivers) sinks down by
 " secret Passages, and in Rocky Ground runs
 " through the Clefts, and by them is con-
 " vey'd to the Subterranean Channels, more
 " or less deep in the Earth, where it is con-
 " cocted, and moves as Blood in the Veins.
 " This Water, at length in its Passage through
 " the Veins of the Earth, finds vent, and
 " runs forth; which place of Eruption we
 " call a Spring or Fountain. Thus he, but
 indeed this Opinion, to me, seems more lame
 and improbable than the former; for if
 Rain, and Snow resolv'd into Rain, were the
 only Source from whence all Springs did de-
 rive their Original, then, in great Droughts,
 and long Vacancies from the fall of Rain and
 Snow; all Springs as well Perennial, that is
 quick Springs, as Land Springs must necessa-
 rily be dry'd up; which, we see least of all to
 happen to quick Springs; however they may
 affect the other; and certainly no reason can
 be given why quick Springs should continue
 their Current, after the drying up of Land-
 Springs (which I confess sometimes to happen
 in

in great Droughts) but that their Original, was not immediately from the same Fountain.

THE third and last Opinion, is of those, who derive the Rise and Progress of Springs and Rivers from a Percolation or Filtration of the Sea Water, through certain Pores and Passages of the Earth; which Opinion the famous *Bernhardus Varenius*, in his *Geographia Generalis*, greatly illustrates; and supports this Proposition, *unde oriatur Aqua que ex Fontibus profluit*, with very ingenious Reasonings; and to whose Sentiments on this Subject I must join Issue.

Vid. Bern-
hard. Va-
ren. Geog.
Gen. cap.
xvi. Prop.
v. Par.
Abfol.

Now that Water is capable of penetrating the most Rocky Bottoms of the Sea, as well as those Parts more soft, will evidently appear from the Experiment Dr. *Oliver* made in the Bay of *Biscay*. * “ We took a Quart * Vid. Ph.
“ Glass Bottle, stoppt with a large Cork; and Transact.
“ fastening it to our Plumbing Rope, we Abr. Vol.
“ sunk it to the Bottom of the Sea in a Hun- I. p. 521.
“ dred Fathom of Water; which as soon as
“ we perceiv’d, we drew up again, and
“ found the Cork quite press’d through the
“ Neck into its Cavity, and the Bottle full
“ of Salt Water. We repeated our Experi-
“ ment with another Bottle and Cork as be-
“ fore, but the Cork being unsound, the Sea
“ Water soak’d through it and fill’d the Bot-
“ tle

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“ tle half full of Water ; the Cork remaining
“ in its Mouth not press’d down at all. We
“ repeated our Experiment a third time, in
“ Ninety Fathom of Water, with a very
“ sound Cork, and much larger than the
“ Mouth of the Bottle, which we beat in
“ with a Hammer as far as it would go, lea-
“ ving about an Inch of the Cork above the
“ Mouth of the Bottle. The Cork at this
“ tryal was only press’d down into the Neck,
“ but I really believe, had we had ten or twen-
“ ty Fathom of Water more, it would have
“ succeeded as at our first tryal.

Now the Conclusion, I would draw from this Experiment, is, the mighty Pressure of Water, in great Depths, and if the Gravitation of Water, in a Hundred Fathom, was so prodigious, as to force the Cork, so secur’d, almost into the Bottle, what may we not reasonably conclude, from five Hundred or more Fathom of Water ; where the Bottom is not Plumable ; what *Strata*, I say, can we suppose so firm, as to make Resistance against the Water entering its Pores, and if we can once suppose it to enter ; it will not be difficult to conceive the Progress it will naturally make : which brings us to consider the manner, how it derives it self to Springs, Lakes, Fountains, and Rivers.

THE great Ocean of Waters continually ^{Original} pressing against this Earth, and being driven, ^{of Springs,} on all sides, equally against its Surface, as to ^{Lakes and} Rivers. its proper Centre, as well by its own innate Gravitation, as the Pressure of the Atmosphere; its most subtile, fine, tenuous, Particles are imbib'd, and taken up by its Spongy Pores, which passing along those minute Vessels, which increase bigger in their Progress, and ascending or descending, as it finds Earth more porous or soft in some places than others, always pressing forwards, till an Infinity of those small Tubes disembody themselves into one Channel; which Stream having a united force, does endeavour to break through the Strata that depresses it in its March; and if possible rises in a Spring, otherwise it continues its Motion, and again, meeting with narrower Passages, is again absorb'd by the more dense Earth, or its glandulous Pores, and makes a new Progress in new Tubes, and the more of these Percolations or Strainings, the Water suffers before it unite in a Spring, the finer and more pure is the Water it self, being depriv'd, of all, or most of those hard Salts it brought with it from the Sea. After its uniting in a Spring, it flows on according to its own Tendency; and here it is to be noted, that having parted with all, or most of, its Salts, shall be able to
rise

rise proportionably higher in its Progress, according to its own specifick Levity or Gravity (which specifick Levity or Gravity, principally depends upon the Amission of more or less of its ponderous Salts) even above the Surface of that Fountain from whence it deriv'd its Being ; and this is evident from the Descent of all Rivers into the Sea, the common Womb from whence they all had their Original ; and a Demonstration of this Ascent of Water we may plainly perceive from the Appearance of Springs on the Tops of the highest Mountains, nothing but the Specifick Levity or Lightness of Water, elevating it so high above the Surface of the Sea ; higher than which it could not go, according to its own Specifick Gravity, unless it had parted with those Salts I am speaking of, tho' I readily confess the Pressure of the Atmosphere, and the innate Gravitation of Water it self, in great Depths, where it's strongly presumemable most Springs do arise, and of which Pressure, I hinted before, does not a little contribute to the Elevation of Water.

Reason of
the Ten-
dency of
Water up-
wards.

But if it be objected that the Gravitation of Water and Pressure of the Atmosphere, might more reasonably be suppos'd to sink the Water perpendicularly downwards, yet will this Objection be of no force, if we consider, that its Course and Progression must naturally be diverted, from the Resistance it will meet with

with from Metalick Ores, and the compactness of the *Strata's* in the Bowels of the Earth; always more Dense as they approach nearer the Centre: Besides, the Bituminous Steems and Vapours arising from Sulphurous Mines, will be a great Means of impelling this Element to the Surface, where the several *Strata's*, being more lax and open, will afford it an easier Passage; which breaking through the *Sabulum Bulliens*; by *Van Helmont* call'd *Quellem*, and which ever accompanies quick Springs, opens to the Air, and so is call'd a Spring or Fountain. The Spring thus arising, by breaking thoro' some Creek or *Foramen* of the Earth, and many meeting together, shall make a little Stream or Rivulet. This Stream, casting a vast Round of Space, with many Windings and Turnings; and meeting with other Springs, gliding from the Mountains or sides of Hills, in its March, shall form little Brooks; and several of these little Brooks meeting together, and uniting in a Stream, shall, with the Acquisitions of new Springs, give Being to Rivers of the greatest Magnitude. Which Rivers having parted with all their seminal Matter, for the Generation of Stones, Metals, &c. and with their several Salts for their Increase and Support, and being unprofitable any longer, for the use of the Earth, are again, admitted into the Sea, as an unnecessary Excrement.

crement. And thus, is the great Course of the Water continu'd in its Circulations round the Globe. So that a Circulation of Water is as justly requisite for the upholding the Symmetry of the Parts of the Earth, as the Circulation of the Blood is necessary to the support of the Fabrick of a Human Body. And, I think, the Comparison of our great Master *Hippocrates*, was not improperly made, when he resembled the Stomach to a certain Sea, and gave, this Preheminence, to that Bowel, that it both did afford Supplies of Nourishment to every Part, and did receive a great share of the Excrements of that Nourishment from every Part; and, certainly, that great load of Phlegm we often find the Stomach oppress'd with, had, once, a Being in the Blood, and was cast off, as an unnecessary Excrement, after it had suffer'd repeated Circulations, and had parted with all its true Balsamick Nourishment. In like manner the Sea having given supplies of Water to this Terraqueous Globe for carrying on the Laws of Secretion and Circulation through its Bowels, by subterraneous Channels, adapted to that purpose, for the support of every Individual; at last receives the Remains of the same Waters into its Bosom again, in order to ferment and fit them a new for the same Purpose.

I COME, now, to examine into the Nature, Cause, and Generation of Stones; and I know, no Author hath manag'd this Argument better than the ingenious *Baglivy*, in a little Tract, he sometime ago publish'd upon the Subject of Vegetation, where he proves the Circulation of the Waters much after the same Manner as I have done; and supposes two first Principles, upon which he builds the Original Foundation of all stony Concretions, and indeed, all solid Substances; and in his *Dissertatio Varii Argumenti*, he pursues the same Method of Reasoning, to which I refer you. But, then, we are to consider, that no live Stone could vegetate from these two Principles alone, without a Semen or *Punctum Salinis* to give it Life; for, in all Water, there is not only a Power of increasing, but a Power of generating, or an actual Power of raising a new Body. This *Semen Saxosum* or *Petrosum*, (for of the Generation of Stones I only now am to speak) which exists in the Water, and which all Waters abound with more or less, as they suffer'd more or fewer Percolations, or strainings, in their Passage through the Pores of the Earth, and as those Places, where they came, were more or less dispos'd to afford them a common Matrix, gives Form to all Stones, and increase by the Attraction of those Salts the Water every where abounds with; and we cannot imagine any Vegeta-

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Blares Bo-
tanick Ef-
says, p. 13.

ble or Mineral could either increase or grow, unless there were a *Primum Stamen* or a *Materia Prima* to give it Form, and this I call its Seed. But, now, if it be objected, that the Seeds of Stones and Minerals never yet could be seen, nor distinguish'd by the nicest Glasses. I answer, that it's no good Inference, that because they have not yet been discover'd, therefore they are not in Being; for Dr. *Blare*, in his Botanick Essays, rejecting the Opinion of *Dillenius*, who defin'd a *Fungus* or Mushroom to be a kind of barren Plant, without Flower or Seed, subjoins his Opinion thus. " I must confess this is a new Philosophy to me, but most improbable, for " as it can be made appear, that Insects are " not produc'd a *Putridine*, which was the " Opinion of the Ancients, *Sed ab Ovo*, so " we have the same Reason to believe, that no " kind of Plant can be generated a *Putridine* " *Sed a Semine*, and its a weak Conclusion, " because Seeds of some Plants have not yet " been discover'd by Microscopes, therefore " they are not. And its demonstratively plain, that no Seeds does afford the Thousand part of their Substance to the Production of the hugest Plants, nay, if all the Parts of an Acorn that give Being to the tallest Oaks, were resolv'd into a solid Substance it would not equal the ten Thousandth part of a Grain: Indeed, the Husk we see, and the

the Inclosures of the Seed appears to the naked Eye; but the prolifick Vertue that gives Life and Energy to the Vegetable, is so minute as not to fall under the Organs of our Opticks; tho' assisted by the best contriv'd Glasses; and to demonstrate yet further that a Vegetable will grow, and Increase, without a visible Seed, to raise it into Life. I need only propose, that common Experiment of several Herbs, as Sage, Rosemary, but particularly Mint, whose Tops, if you lop off, even before the Appearance of any Seed, and place them in a Vial of Water, the Mint will live, grow, and increase, and shoot out into several Branches. Now, what can preserve Life to this Plant, broken off from the Body, but that the *Plastick Vis* of the Seed, diffus'd thro' all the broken Stalk, does now descend by the Attraction of Water, and shoot out into Roots as at the beginning, when this Plant began first to germinate.

If, then, Vegetables may grow without visible Seeds, as we are certain they will, I see no Reason why the same Power should not be attributed to Stony Concretions, and why they should not be granted to derive their Original from Seed, tho' invisible.

ABOVE we deriv'd the Original of all Springs, Fountains, and Rivers from the Original of Stones, Sea,

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Blares Botanick Essays, p. 13.

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ABOVE we deriv'd the Original of all Springs, Fountains, and Rivers from the Original of Stones; Sea,

Sea, by subterranean Passages, where the Water circulates thro' the Bowels of the Earth, and in its Passage deposits the Seed of Stones, Minerals, in places proper for their Reception, which attracts the Salts, and by an ingenerate Ferment, converts them into a *Succus Suigeneris*; and if it so happen, that Fish or any such Animal come into those Places, where this petrifying Seed is lodg'd, they are converted into a Stone by this petrifying Juice, assuming an indurated Substance, from which, all Stones, whether Rocks, Quarries, Marcasites, &c. within, or upon the Surface of the Earth, had originally their Concretion. Hence is the Reason evident, why Animals sometimes are observ'd inclos'd in some Stones or other Mineral Concretions; that a Toad should be found alive in the midst of a Stone; and that a Spider, or other Insect, should appear envelop'd in a piece of Amber; no other Reason can appear, but that these Animals were there, whilst those Stony, or other Mineral Concretions, were in their Succulencies, and that there are Mineral Juices, that constitute Mineral Bodies, is indisputable. Dr. Lister in the *Philosoph. Transac.* speaks of a Letter he receiv'd from one Mr. Jessop, who avers he receiv'd, of Captain Wain, a white Liquor, resembling Cream, both in Colour and Consistence, which was found in great Quantities at the Bottom of a Coal

Coal Pit, and that the Miners in *Shropshire*, upon breaking the Iron Stone, do frequently find a great Quantity of whitish Milky Liquor inclos'd in its Centre. It is in Taste sweetish, only it hath a Vitriolick, and Iron like Twang with it. And the most learned and ingenious Mr. *Ray* demonstrates a *Succus* in his Description of the Trochites or Sparry Stones, not unlike that found in Mines *

Vid. Phil.
los. Transf.
Vol. 2. p.
500.

“ Tracing their Original, I find some of the
“ first Buddings about the bigness of a young
“ Cocks Spur, and very much like it: The
“ Branches are all jointed, and have the
“ same Bore with the Trunks, and are ter-
“ minated with round and blunt Joints, but
“ very small. I find the Bores or Hallows
“ commonly full of a Milky curdly Substance,
“ which probably in their time of Growth
“ was Fluid, like that of Coral. These Rock
“ Plants begin their Growth from the finest
“ Parts of Clay, being commonly white, soft,
“ and smooth at first, and by degrees come
“ to have Ridges, Knots, and Sutures, as
“ they arrive to a Stony or Sparry Nature.
“ The Pith, continues this Gentleman, is
“ still soft, and white as the whole was at
“ the first, and is continually refresh'd by the
“ Mineral Steams and Moisture which have
“ free access to it thro' the five hollow Feet
“ in the figur'd Roots, or thro' the Mass of
“ Clay which commonly lies under the plain

“ Roots. Nor can it be said, but those Stone
 “ Plants have true Life and Growth; for
 “ since, in the Curiosity of their Make, they
 “ may contend with the greatest Part of the
 “ Vegitable Kingdom, and are shap’d like
 “ them, having inward Pith or Sap, and
 “ likewise Joints and Runnings in their Grit,
 “ and sometimes Cells, which may very well
 “ supply the Place of Veins and Fibres, I
 “ know not why they may not be allowed
 “ as proper a Vegetation as any Plant what-
 “ soever.”

THUS far he, in the Description of Rock-
 Plants. And its certain, that Marble and
 most other Stones, before taken from their
 Beds in the Quarry, are soft, and do not re-
 ceive their full Induration till after they are
 expos’d to the Air, and that sandy Tartarous
 Juice, which is suppos’d their Nourishment,
 is hardened. How different therefore, from
 Truth, are the Notions of Dr. *Woodward* up-
 on this Subject, in his *Essay towards a Natural*

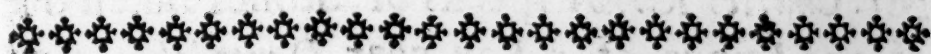
Vid. Essay
towards
Nat. Hist.
of the
Earth, p.
78.

History of the Earth, where he thus concludes,
viz. “ That the Strata of Marble, of Stone,
 “ and of all other solid Matter, attain’d their
 “ Solidity as soon as the Sand, or other Mat-
 “ ter, whereof they consist, was arriv’d at
 “ the Bottom, and well settl’d there. And
 “ that all those Strata, which are solid at
 “ this Day, have been so ever since the De-
 “ luge.”

“ luge.” In short, I think, from the foregoing Reasoning, and Recitals, it is evident, that all Stones, Marcasites, Spars, &c. have a peculiar Seed, which tho’ invisible to the Sight in the Beginning, yet by the Attraction of those concreting Salts, in Progress of Time, may grow into an exceeding great Bigness. And here its to be noted, that those great Quarries and Mountains of Stone, we in several Places behold, have risen from this *Semen*, deposited in the Bowels of those vast Excrescences, and have been left there, as Monuments to Posterity, of Waters circulating thorough those Places, which, now perhaps, may be forsaken by that Element. And here it may not unfitly be ask’d, Why, for the most Part, we perceive greater Stones in small Brooks, or Channels, than in larger Rivers? The Reason of which depends upon the Water having deposited, all or most, of its Salts in the Bowels of the Earth for the concreting subterraneous Stones, Minerals, &c. and therefore, upon its first breaking forth, affords the greatest Supply, of what is left, to those Stones in the Brooks it runs into first, which leaves still a lesser Portion for the Stones of those greater Rivers, where it comes last, and, consequently, cannot raise them to any considerable Bigness: Which Concretes, most properly, may be term’d dwarfy Stones. Indeed, tho’ the Salts are

principally concern'd in the Increase of all solid Stones, yet all Seeds have a determin'd Greatness of Extension, beyond which they cannot raise themselves : And whatever Salts shall endeavour to close with the Pores of Stones, after they are arriv'd to this determin'd Bigness, are not admitted, but as these Stones part with some of their Substance, as a loose unnecessary Excrement. As to the Difference of Stones, in relation to their Compactedness, or Laxness, that depends in some Measure upon the Hardness or Softness of those concreting Salts ; but chiefly, and principally, upon the different Figures of those Salts, which affords a greater Closeness, or Openness to their Pores ; and, by this Means makes them more or less ponderous. Indeed, many Accidents may concur, to make that Difference in Stones, I have not Room here further to discourse of,





S E C T. IV.

Of the Original, Cause, and Generation of Stones in Man's Body; and the Affinity they have to those generated in Rivers.

FROM Tracing out the Original of Stones in Rivers, pass we, now, to a Consideration of those generated in Bodies: And, that there are Stones and Gravel generated in several Parts of the Body, besides the Kidnies and Bladder, we have the Attestations of the most renown'd Masters of Physick, in Support of this Avouchment; who declare to us, (many of whom were Eye-Witnesses of the Facts,) that they have known Stones taken out of the Brain, Lungs, Heart, Liver, Gall, Bladder, &c. Thus *Ætius* declares, he saw a Stone taken out of the Eye-lids; and *Hollerius*, in his first Book of Diseases of the Head, and, I think, about the 45th Chapter, reports a Case, in which Stones were taken out of the Brain: *Florentinus* has such another Case, of a Stone taken out under the Tongue: Sir *Edmund King* relates of
a Stone

A Compleat Treatise of

a Stone taken out of the *Glandula Pinealis*; Mr. *Charles Kirkby* speaks of Stones taken out of the Lungs of a Boy near *Dantzick*. And Experience daily assures us, that Stones are found in the Galls of several Animals, but especially in Man. I was present at the Opening of a Man that died of the Yellow, or rather Black Jaundice, and in his Gall-Bladder was found a Stone bigger than a Walnut, of a black Colour. And *Fernelius* acquaints us with a Story, of an Old Man, that, being defunct, and afterwards open'd, had neither Gall nor Bladder, but in its Place a great Stone in a Capsule; and its credibly reported of *George*, King of *Bohemia*, that his Gall was found converted into a Red Stone. *Paraus*, l. 25. cap. 15. reports, that he took a Stone out of a Man's Knee. *Paulus Aegynata* found some in the Nerves, and calls them *nodosa Nervorum Concretiones*; and we frequently observe stony Crufts form'd about the Sockets of our Teeth. Mr. *Tolet*, Lythotomist in the Hospital at *Paris*, speaks of a Man that had a Stone, of the Bigness of an Olive-stone, came out at his Navel, and the Man was living 20 Years after. But these Relations being foreign to my present Purpose, I shall wave their further Prosecution, and rejoin all those, who may be desirous of seeing more ample Accounts, to the learned Tracts of *Hildanus*, *Fernelius*, *Hyeron*: *Mercurialis Sennertus*; whose copious Wri-

Writings they may consult upon this Subject: My Design being Brevity, and only to exhibit a compendious Account of the Stone and Gravel, so far as these Maladies may be said to afflict the Kidnies and Bladder.

I BELIEVE there is no Diltemper in Man's Body, that the Original, Cause, and Generation of which, has been more canvass'd, than of this; whose different and disagreeing Opinions to inlarge upon, would not only swell this Book beyond its intended Bulk, but also would little avail the Information of the Reader. I shall, however, spend some little Time in enumerating the particular Opinions of the several disagreeing Parties, mark the most probable, and at last close with my own. The most antient Galenists did suppose, the Stone to arise from a viscous Phlegm generated about the Kidnies, and by the excessive Heat of the Liver, and other neighbouring Parts, to be dry'd, or as it were bak'd into a Hardness, equal to that of the most solid Stones. But their Successors, perceiving this Opinion not very feasible, neither diffensible by proper Reasons; because, that best of Masters, Experience, teaches, that Old Men cold of Constitution, and Women naturally Phlegmatick, are troubled with the Stone and Gravel, had Recourse to occult Qualities. That is a Plastick Vis, or
Ge-

Generative Faculty in the Kidnies; so the ingenious *Fernelius* expresses it, *Renum arenosam calculosamque Dispositionem*. This was deriving a Disease from I know not what, and might serve, I suppose, as a good Cloak to skreen the Ignorance of former Ages, but will not pass current with the nice and curious Taste of the present.

BUT to them succeeded another Sort; and they were for deriving the Original of this Disease from a Lapidifick or Petrifying Spirit, taken into our Bodies with our Aliment; and to support this Assertion the better, they give us Relations in some Histories, of whole Troops of Men converted into real Stones, by the Exhalations of a petrifying Spirit from the Bowels of the Earth. Indeed, I my self had a Stone, originally Wood, converted into such, by being immers'd in a River of *Apeulia*; and such petrifying Rivers are notorious in both *England* and *Ireland*: But, then, if we admit such a Spirit into the Bowels of Man, it might as naturally convert the Solids into a Stone, as the Fluids; and the Brain, the Heart, or the Lungs, might as easily suffer as the Kidnies or Bladder, and consequently endanger the humane Fabrick. But when the high and mighty Monarch of Physick, Unlocker of all Spagyristick Arcana's, the Bombastick *Paracelsus*, (so he styles him-

himself in his *Paramirum de 5 Entibus Morbor. Numer. 10.*) appear'd on the Stage of the World: His squeamish Stomach nauseating the insipid Humours of the Schools, and disdain- ing to tread in the Steps of his learned Predecessours; desiring to be singular, solves the Matter of the Stone to be deriv'd from a Tartarous, Aluminous, Styptick, Lapidifick, Mucilage: So his Words import, *Tartaream nempe Mucilaginem, Aluminosam, Stypticam, Lappillosam.* And a little after, speaking of the Generation of the Stone in the Bladder, he uses these Words, *Calculus Vessicæ ex Sale Urinæ per Elementum Ignis generatur;* and then follows, *In Vessica enim fortissima Vis est:* And a little after, *Hæc Vis est Salis Urinæ ex qua Mucilago Coagulationem accepit.* He seems to intimate, that the Mucilage is the Matter of the Stone, which coagulates by the Admission of the Urinous Salts; but this Derivation is so frivolous, that, I think, it needs no Refutation. *Van Helmont*, the Prince of Chymists, supposes the Stone to arise from a Calculous Matter, which he calls *Duelech*; and which, according to the Opinion of our Author, consists of a fæculent Dreggy Tartar, join'd with a volatile hardening Earth; this *Coagulum* existing in the Urine, and being conjoin'd by a Union of their Salts, generates the Stone.

BUT

BUT to come to the Opinions of the present Times. The Moderns, especially the Chymists in general, assert that an acid Spirit, joyn'd with the Alcalous Spirits of the Urine, to be its material Cause; for say they, by such a Conjunction, the Tartarous Salts of the Blood and the Earthy Sediment of the Urine are præcipitated, from which præcipation, the Stone takes its Original. And here it is proper to advertise, that both Ancients and Moderns, have ever allow'd an Error in the Digestions, a Weakness in the Kidnies, as also an Effeteness or Languidness of the Expulsive Faculty of the Bladder (which is only a weakness in the circular Nerves of its Spincter Muscle, whereby it cannot contract it self with that force, necessary to the Expulsion of all the Urine) to have contributed no small share, in disposing the Causes to produce their Effects. And indeed, tho' the latter Opinion seem the most feasible, yet the different Hypothesis, that in all Ages have been avanc'd concerning its first Formation, induces me to believe, that its true and genuine Cause, has never yet, been rightly accounted for; and what, strongly, supports me in this Assertion, the more, is, the Consideration that the most ingenious Men have ever concluded large Stones as infrangible,

frangible, and given them over as incurable by Medicine.

BUT to proceed, we see a Stone generated in the Kidnies or Bladder, how it came there is the Question, and of what Matter it consists, we come now to examine. In the first place, I believe, it impossible to lay down such Principles, as may firmly stand for the Basis and Foundation of all Stones, that at all times may equally affect every Individual; for since several Accidents may daily happen, that may make considerable Alterations in the Urines of different Persons, it will undeniably follow, that the Principles suppos'd to be the Basis of the Stone in one Subject, must suffer an essential difference in the Bodies of others, and this may proceed principally from the difference of Diet, different Persons are accusom'd to.

HOWEVER when we analyze or resolve into Principles, a Calculous taken out of a Human Body; we find the Basis of it, for the most part, to be a fix'd Salt, that will endure the strongest Fire. This Experiment I have more than once try'd upon a *Calculus Humanus*, taken out of the Bladder, and ever found a very great proportion of fix'd Salts, tho' I must confess, in some more than others; so that what Dr. Lister advances concerning
the

the Stone in the Bladder, is a mere Notion, where he supposes it to have a nearer resemblance to the stiffness of Bone, rather than the hardness of Stone, because according to *Hydrastatic* Laws, it is specifically lighter, than the Standard of those Concretes, that, from their Gravity, come up to the Denomination of Stones. Yet, upon the strictest Examination, into the *Pondus* of these Petrified Concretes; I have, several times, observ'd Stones taken from the Bladder, that, Bulk for Bulk, have fully come up to the Standard of Flints in Weight. This, I say, when immediately, upon Extraction, they have been ballanc'd; for I am very certain, the *Calculus Humanus* looses, of its Weight, considerably, after it is taken from the Bladder, and daily expos'd to the Air; and the Reason is very clear: For the Nitrous Particles of the Air, dissolving into a *Deliquium*, the loose Salts, that were not well attach'd to it in the Bladder, renders it full of Pores, into which the Air insinuates, and by Degrees, consumes it more and more, till at length, it bring it to the perfect Nature of a *Pumice* for Lightness. I had the Sight of one, that the Gentleman, whose it was, aver'd that when it was taken out of the Bladder, it weigh'd full nine Ounces, and, at that Time, when I saw it, which was above fifteen Years after, it did not weigh above ʒi ʒiʒ gr. xii .
But,

But, to wave Controversy with so great a Man, we are to consider, that tho' the Stone contains so vast a Proportion of fix'd Salt, yet, certain it is, that it never came into the Body fix'd; but, was, primarily that essential Salt, we suppos'd in Rivers, and to circulate, with the Waters, round this Globe, and to give increase to Stones, Minerals, &c. and, being inherent in our Aliment, both Solids, and Liquids, does in its various Meanders, and Circumgyrations round the Body, lose much of its Essentiality, and becomes more fix'd, by the heat of the Stomach, and that intestine Motion of the Blood and Humours, it circulates with: And the more Heat there is in any Body, the more fix'd is this Salt, and consequently, the more hard and compact, which is cemented into a most solid Stone, by the Concurrence of a glutenous *Lympha*, not much unlike the glare of an Egg, and that there is such a viscid *Lympha* in the Urine, experience proves, from the boyling a good Quantity of this Fluid, almost to Dryness; which, then, betrays it self more roapy, and clammy, than when the more aqueous Parts gave it a greater Tenuity. And *Hollerius* seconds this Opinion, of a viscid Humour, in these Words, *Arenas multi mingunt, neque calculosi sunt. Quoniam illa non coguntur in Lapidem, nisi viscido aliquo & crudo Humore super-veniente, ad quod, itidem & Tempore est opus.*

E

Hence

Hence, the Reason is evident; why, very often, we perceive much Gravel to subside in the Urine, in People that never had any Reason to complain of the Stone, for unless this viscid *Humour* abounds in the Urine, the *Arenulous* Atoms can, in no wise, be link'd together, and consequently, cannot, with any probability of Reason, form a Stone.

Thus far, as to the matter of the Stone, and the manner of its Formation; But, then, we are to consider, that several Accidents must concur, without which, it cannot receive a Being in the Body. First, An Error in the Digestion of the Stomach, when the Chyle is not well assimilated, not being well mix'd, and combin'd with the Blood, and for want of Animal Spirits, the Serum, being too grossly secreted by the Kidnies, whereby the fix'd Salts, and the more weighty Particles of the Urine are separated, amongst which, the most ponderous is ever first præcipitated, according to the Laws of Gravitation, which proves the central Point, or Principal of Attraction, about which, all the rest do incline, and subside, and so forward the Urine, daily, affords more or less Matter, for the increase of the Stone thus form'd. Secondly, A bad Disposition of the Parts, when the Kidnies themselves are naturally lax, or weak, which
Lax-

Laxness or Weakness, many times, we receive in our Embryonism, and then the Affect, in some Sense, may have Relation to a Hereditary Disposition. The first groundwork, or Centre of a Stone, may be a Particle of Matter, so minute, as not to come under the sight of the most curious Eye, which increasing daily, by the Admission of new Matter, adhereing every where uniformly, like a Flake upon a Flake, as may be perceiv'd in our Onions, or *Stratum super Stratum*, as may be observ'd in the Formation of our *Bezoar* Stones; the Infinity of which Strata's or Plates, may increase it into an exceeding great Magnitude.

I have observ'd, that those, that have bent their Inclinations much to Studies, have been very subject to this Affliction, thought full Persons, especially, suffer, for the Animal Spirits being attracted to the Brain, to support the Meditation of deep Reasoning, is, very often the Occasion, why the Secretion of the Urine is so gross in the Kidnies, and so plentifully abounds with such great Loads of a Sandy Sediment, but, be that as it will, I am sure, that Men of great Business, that are intent upon Affairs of Moment; shall, inevitably, suffer more or less from this Disease; and, Men of covetous Tempers rarely are free, because their Minds being

Much and frequent studying pernicious to those that do perceive a Disposition to favour the Stone, As also Covetousness and

intention why.

intently employ'd (tho' cursedly) in gaining the *Irritamenta Malorum*; their labouring Thoughts deprives those particular Parts, of that due Quantity of Animal Spirits, that ought to support their Actions: And, its remarkable, that this Distemper, even as the Gout, does not so frequently take up its Residence with poor, mean, plebeian Spirits; as with the Great, the Brave, the Generous, and the Wise: It loves the Courts of Princes, and to sojourn with able States-men; who, by their labouring Thoughts, having overstrain'd their Spirits, loaden with Schemes, for the support of Government, have split upon this most miserable Rock. And I seldom have known any Person, whose Inclinations was greatly bent to Studies, but more or less, he had some Symptoms, that plainly discover'd him inclinable to this Malady, which would more evidently appear, as he began to advance in Years; and we may be sure, the great Cause, why so many of the Ancient Prelates of the Church, were recorded to have labour'd under the Stone and Gout, was, their spending so much of their time in Divine Contemplations, which depriv'd their Bodies, of that supply of Animal Spirits necessary for the Performance, of the Actions, of the several Parts: And what makes, what I have advanc'd, still more feasible, is, the Consideration, that those troubled with the Gravel

Gravel or Stone, rarely, or seldom, are free at the same time, from the *Hypocondriac* Disease, or as some will have it, the Splenitic Affection. The many, I have observ'd, under the aforesaid Complication, made me unwilling to pass by this Remark. The learned Dr. *Cheyne*, in his Essay upon the Gout, excellently well demonstrates the Similitude there is between Gouty Chalk Stones, and those in the Bladder, in these Words, " That the
 " Chalk Stones voided from the Joints of P. 64. 35.
 " Gouty Persons, and the Gravel Stones
 " found in the Bladder, are to all their essential Qualities, the same. They have both
 " the same Colour, Taste, and Smell, yield
 " both the same Principles, when chymically
 " treated, they have both the same internal
 " Texture of Parts, as far as can be known,
 " and, even, the same outward Shape, when
 " unbroken and unconfin'd by hard Substances, and they generally happen to one and
 " the same Person. And this shews that
 " they are both owing to the same Conformation of Parts, and other general Causes. Now if these Reasonings stand good, I cannot see, it would be any Impropriety of Speech, if I should call the Stone in the Bladder the Gout in the Bladder, since they both owe their Being to the same Original. And our ingenious Countreyman, Dr. *Musgrave*,
 in his *Intern. Dissert. de Arthrit. Anomal.* ar- Chap. IX.
 Sect. IV.
 E 3 gues

gues very ingeniously in Defence of *Nephritic* Gouts, and, truly, supports his Opinion with a great deal of Reason, and as the former, so he, makes the Parts and Composition of the *Arthritick* Stone, to bear a very near Resemblance to that which is naturally in the Kidnies and Bladder, so his Words import “*Cal-*
“ *culi autem Arthritici, Partes et Composi-*
“ *tionem si attentè inspexerimus, eundem,*
“ *fere, quæ Calculi Renum vulgaris et non*
“ *Arthritici esse inveniemus.* And, just after, he proposes the ingenious Experiment, that *Leewenhook* made use of, to discover the difference between the *Arthritick* Stone, the *Lime* Stone, and the natural *Nephritick* Stone, and delivers it in these Words; “*Calculus*
“ *cremavit ille, id est, Leewenhook, cremato*
“ *que, adjecit Aquam fontanam. Idem fecit*
“ *cum Calcaria & Tofacia Arthriticorum*
“ *Materia. In his Lixiviis, Beneficio My-*
“ *croscopii, apparuit Salinarum Copia Per-*
“ *ticularum planè similium, rigidarum nem-*
“ *pe, Concretioni aptarum, Dissolutioni re-*
“ *sistentium.* By the Evidence of this Experiment, it appears, that the Salts of the Stone, in the Kidnies and Bladder, must needs be very fretting, since they bear such a near Affinity to those of *Lime* Stones, and those of the *Tophaceous* Gout Stone. So that the Points of their several Salts, are not distinguishable from one another, and I doubt
not

not but this agreeableness of Particles is one great Cause, of that excessive Heat, which troubles those Subject to this Disease. The Difference between those *Calculouses* generated in Rivers, and these in Bodies, is, that the former assumes their Induration from a fermentaceous Juice, of which a proper Seed is its Center: the other from Accretion or Apposition of Particles of Matter, which is strongly cemented together, by a glutinous *Lympha*, which resides in the Urine of most calculous Persons, and of which, we have taken Notice of before. And, doubtless, it was from this Original, that Dr. *Slare* was deceiv'd into an Opinion, that, these, Concretes, in Bodies, have a nearer Affinity to Bones than real Stones, which he grounded upon a little quantity of Emphyreumatic Oil that the *Calculus Humanus*, always, affords upon a strong Distillation, not common to other Stones. But that Gentleman might easily have accounted for the fætidness of that Oil, if he had considered the Nature of that *Lympha* which is so necessary to compact the *Arenulous* Atoms together, before any Stone can be formed. But, before I close this Section; I must beg leave, to subjoyn the excellent Reasoning of Dr. *Frehtagh*, chief Physitian at *Ratisbon*, upon this Subject. He, of all the Writers I have met with, gives the clearest and brightest Ideas of the Formation of the Stone. In a

Letter to the ingenious *Gregory Horstius. Epist. Med. lib. 2. Sect. 19. De Causis Calculi & suppressione Urinae.* He, first of all, rejects the common, receiv'd, Opinion, of those that defend the simple Humours, first Qualities, and *Plastic Vis* of the Kidnies, to be its only Cause. These are his Words, " Quod pace
 " magnorum illorum Virorum. Rationi &
 " Experientiæ non videtur consonum. Nam
 " Humor simplex, nec Salem, nec Tartaram,
 " nec Calculum efficere potest, nisi Sal, vel
 " Tartarea Materia ei, primum, fuerit ad-
 " mixta, quæ sine Calore ullo extraneo,
 " svaptè Natura, vergit ad Congelationem &
 " Indurationem." And after he has demon-

Ibid.

strated the concreting Cause, to be in the Matter of the Stone, he proceeds to support his Reasoning with Arguments drawn from the Generation of Stones in Rivers. " Quod at-
 " testantur Lapidum atque plurimè Corpo-
 " rum extra humanum Corpus Concretiones,
 " ut sæpiusculè videmus in Thermis, Fontibus
 " salinis, Acidulis, Gypsi, Calcis similium
 " que feracibus Fontibus, Styrias quasdem
 " & Tophos, Canalibus accretos habentibus.

Ibid.

And, then, he proceeds to confirm these Attestations, from what himself was an Eye-witness of at *Francfort*, near *Carthusia*, upon the Confines of *France*. " Et ego, saith he,
 " *Frankfurti* cis Viadrum juxta *Carthusiam*
 " aliquoties αὐτοπτης admiratus tum, quod
 Aqua

“ Aqua præterlabens, Ligna, Cochleas, &
 “ Nucum Putamina, in Lapidem mutaverat.
 And then subjoyns the Reason of this Stony
 Change. “ Rationem hujus si inquirere ve- Ibid.
 “ limus, nullam aliam inveniemus, quam,
 “ quod, istæ Aquæ spiritu salino præ cæteris
 “ impregnatæ.” And, after, he hath freed the
 Kidnies from a generative Vis, or Force; he
 proceeds to the Apparatus or Generation of
 the Stone, and joyns issue with the most lear-
 ned and experienced Doctors in these Words,
 “ Statuo, itaque, cum sanioribus Medicis Ra-
 “ tione Experientia que edoctis, Causam Cal- Ibid.
 “ culi efficientem Materiæ inesse, ubi Mate-
 “ ria serum, Causa efficiens, Sal coagulans in
 “ fero, subjectum adæquatum Renes sicci, in
 “ quibus citius faciliusque fit Concretio.”

Here, he makes the efficient Cause to be in
 the Serum, which is that essential Salt, I, be-
 fore, spoke of, and which he calls *Sal Coagulans*,
 and, with which, the Serum abounds, and be-
 comes more fix'd in its various Circulations.
 By *Renes Sicci*, I suppose, he intends no more
 than a Weakness in the aforesaid Bowels,
 which more easily, and readily, dispose
 the Salts to a Concretion. He pursues the
 Argument still on, and assigns Reasons, why
 one Country or Province, more than another,
 is subject to this Malady; and, in Avouch-
 ment of this Truth, gives an Instance, what
 he

he himself (no ways naturally dispos'd to ei-
 ther Stone or Gravel) suffer'd from drinking
Bavarian Wines. “ Rationes confirmat Ex-
 “ experientia, cum Calculus, in Bavaria, Au-
 “ stria, Moravia, & Hungaria, frequentior
 “ sit, quam in aliis Regionibus, ob Potulenta :
 “ Nam quò magis sunt nitrosa, Salsa, Vitrio-
 “ lata, Aluminosaquè, eò magis, & citius, in
 “ Corporibus Nostri Calculus accrescit ;
 “ quod in proprio Corpore, alias indisposi-
 “ to, expertus sum. Nam Ratisbonam ve-
 “ niens, elegi, præ Rhenensi, Bavaricum Vi-
 “ num ; illum que e vestigio comitabantur
 “ Dolor Dorsi, Effluxus Urinæ præter soli-
 “ tum urgens, viasque lancinans, quæ Symp-
 “ tomata me ad ἰσχυρομίαν adduxerunt, & in
 “ illa fabulum Calculum que mihi Monstra-
 “ runt.” And then subjoyns how he was
 freed from this Evil. “ Aquo Malo, sola
 “ Vini Bavarici Abstinencia, GRATIA DEI
 sum liberatus. Afterwards, he proceeds to,
 assign the Cause why some more, some less,
 in the same Country are obnoxious to this
 Disease. “ Nec refert, *continues he*, cur alii-
 “ magis, alii minus Calculo sint obnoxii ; Ratio
 “ Temperamenti habenda est. Nam cum
 “ Mali Partiumque Dispositio adsit, & exhi-
 “ beantur quæ Causæ Morbi Natura sunt si-
 “ milia, facile illiciuntur, quæ ipsi sunt ho-
 “ mogenia.” And, at last, concludes against
 those

those that defend this Position. That all Stones in the Bladder, take their Original in the Kidnies. “ *Nec consentio cum illis,*
“ *qui semper Rudimentum Calculi Vessicæ,*
“ *in Renebus statuunt, nam eædem sunt*
“ *Causæ Augmentationis & Generationis,*
“ *quæ Omnes, in Vesica ac Renebus reperiri,*
“ *possunt.* Thus far he, and I thought the Argument so well manag’d, by this excellent Author, that a Transcript of his Words, could not but be very acceptable to the Reader.





S E C T. V.

The remote Causes of the Stone and Gravel.

OF the Formation and Make of the Stone, how it takes its Original, as also of its immediate Cause; I have treated, very largely, in the former Section. I shall make it my peculiar Province, in this, to explain, what Influence the Nonnaturals may have, in disposing the Blood and Humours to a Generation of this cruel Enemy, that gives such Distress, to miserable Mortals.

THE Ambient Air claims our first Consideration, both as it stands in the Front of the Nonnaturals, and as it is of such extraordinary Necessity, in sustaining the Vital Flame of human Nature. That the Ancient *Latins* did define the reasonable Soul, to be nothing else, but the Air taken into the Body, warm'd in the Lungs, heated in the Heart. And diffus'd thoro' the whole Body. So *Varro* concludes it, ——— *Aerem Ore conceptum, tepesactum in Pulmine, fervefactum in Corde,*

Corde, diffusum in Corpus. But, I hope, none expects from me here, that, I should spend much time in needless Digressions, on the Nature and Use of this Element, as to its several Variations and Gravitations, at different Seasons, and the Alterations, those Changes, frequently, raise in our Blood and Humours; I shall confine my self to a Consideration of its Effects, only, as far as it concerns my present Purpose.

THE Air, most of all, offends the Disposition of Calculous Persons, and disposes the Humours to a Generation of the Stone or Gravel; when its Elementary Fluidity is greatly crowded with Sulphurous Salts, which Salts are most abounding in the Air, when it is thick, cloudy, and sultry: A close hot Day, without Rain, (when the Atmosphere is, as it were, loaden with Fleetings) shall many times give great Disturbance to Persons labouring under this Affliction, and most shall find the Severity and Painfulness of its Paroxisms, in the Summers heat, in sultry Weather, in, or near, the Dog Days, for then the Air being strongly impregnated with igneous Particles, inflames the Sulphurs of the Bile, actuates the Blood, and, by increasing the velocity of its Circulation, flings off much Serum by Perspiration, which in-crassates the Humours, and makes a larger proportion

proportion of fix'd Salts, than usual, be amand-
 ded to the Kidneys, which being hot in them-
 selves, and receiving greater heat from the
 velocity of the Bloods Motion, are apt, in
 their Secretion by the Kidnies, to impair
 the Tone of these Bowels, and then, the Ef-
 feteness or Languidness of their Action, not
 being able to expel all the fix'd Salts, the re-
 maining Drossy Particles, lodging themselves
 in the Cavity or Sinus of the Kidnies, shall
 concrete, and in time raise a Stone to that
 Bigness, as greatly to disturb the Subject
 in whom it resides: Or if, further, we sup-
 pose all those Salts to pass those minute Poru-
 li or Glands thro' which they are secreted,
 and, with the Urine, to descend into the
 Bladder, yet we are to consider, that the
 more Ponderous Particles by their innate
 Gravity, settling to the Bottom, or it may
 • be, Sides of this Bowel, as we have demon-
 strated in the preceding Chapter, may con-
 crete, and grow into a Stone of a vast Big-
 ness, unless the Action of those Parts do pre-
 vent that Increase, by timely excerning them
 with the Urine.

NOR does an extreme cold Air less affect
 some Calculous Persons, whose Constituti-
 ons being more curious and tender, are not
 so well fenc'd against this Aerial Fluid,
 when excessively impregnated with nixivial
 Par-

Particles. A sharp cold Air (as always accompanies Snowy Seasons) being ever known greatly to discommode infirm People, for it weakens the Texture of the Brain and Nerves, causing Defluxions to fall upon the Eyes and Palat, blunts the Action of the Animal Spirits, retards the Circulation of the Blood, and by contracting the Pores of the Skin, obstructs Perspiration, which crowds the Body with Obstructions, and hinders the Secretion of the several Juices : The minute Glands of the Kidneys, in particular, being stuffed and lock'd up with the Dregs of the indepurated Serum, produces a Suppression of Urine, which heats the Body, and inflames the tender Membranes of these Bowels : And if there be a Disposition favouring this Disease, one needs not the Wisdom of *Solomon* to determine what will be the Consequence.

SECONDLY, with respect to the Nature and Quantity of Meat and Drink, which comes next, in order, to be consider'd, and it manifestly appears, that, not any of the Non-naturals, give so considerable an Alteration to the whole Frame of our Bodies, as this of Diet, which when taken in due Proportion, and agreeable to the Nature of our Constitutions, may fitly enough be call'd *Pabulum Vitæ*, but if us'd in extremes, whether in
Quan-

Quantity or Quality; may prove *Pabulum Mortis*, to the Poet.

*Materiam Lethi bibimus cum Vescimur, ecce,
Pabula quæ Vitæ, dant Alimenta Neci.
Ipso Mors sub Dente Crepat, &c.*

BUT, my Intention is not here to prescribe any Rules to those of an Athletick Constitution, to them, their own Customs are a second Nature. All, I shall observe upon this Subject, is, to intreat Persons of a weak Constitution, and those that do find, in their Bodies, a Disposition favouring the Generation of Stone or Gravel, to avoid all new Bread, and the same not well fermented, or that is overmuch bak'd. All brown, coarse, Bread made of baser Grain, as Rye, Barley, &c. ought to be proscrib'd, and, if possible, the Patient ought to eat nothing but the purest Wheat Bread. Let him, also, abandon as much as possible, the much eating of old kept *Cheshire* Cheese, as also of gross, hard dry'd, Beef, Pork, &c. And, indeed, all dry'd Meats, carry much of fix'd Salts in them, which Salts, become more fix'd in the Body, and, are easily separated in the Kidnies. All sorts of Venison are also prohibited, as Meats of bad Digestion, to which we may add, Fish wanting Scales, breeding in Mud, and standing Waters; as also, Water-Fowl, and Fowl

Fowl that frequent Fenny Grounds and Lakes. But the difference of Constitutions (which we must ever regard) makes a great Alteration in the usage of Meats. One Sort shall be agreeable to the Constitution of one Body, which, to the Constitution of another, tho' labouring under the Affliction of the same Disease, shall prove very pernicious. And, I seldom observe, in the matter of Diet, any thing condemn'd by one Father of the Faculty, but what commonly is commended by another; which Disagreement, upon this Point, certainly proceeded from the different Temperatures of the several Patients they had to deal with. And does not experience daily demonstrate; that the Mind shall have, many Times, a longing Desire (under several Disasters, besides a Woman pregnant with a Fætus) for some things very dangerous, or at least, highly improper for the Patient under these Circumstances; and this strong Inclination shall so alter the Properties of the Thing desired, as to invert the Order of its incongruous Qualities, and turn it to as great an Advantage on the Patients side, as the most certain *Energitic Vis* of a Specifick Remedy, shall prove successful to the removing of the Disorders it is given for; and a Cure shall succeed, after this desire is satisfied, beyond Expectation. And, there are some still living, who can testify what great Relief was

F

given

given from a large Draught of small Beer, when greatly desir'd, in a raging Fever, whose dismal Symptoms prognosticated little to hope for the Life of the miserable Patient. And, indeed, Life it self would be miserable, and scarce worth that anxious Care many of the Ancients prescrib'd for the obtaining Health. For, if we follow the Advice of the most Learned Physicians, and Men of the greatest Renown, that hitherto have writ upon the Subject of Diet, we shall be oblig'd to quit almost the whole Course of Nature, and much the greatest Share of all that Variety of Eatables and Potables, the kind Providence of Heaven has ordain'd for the Use and Sustainence of Mankind.

* Lib. 3.
Cap. 1. de
Aliment.
Facult.

* *GALEN* condemns all Beef, as a Meat that breeds gross, thick, Blood, and therefore subject to Obstructions: Pork, of all Meats, the most nourishing, yet by *Michael Savanarola* is discommended, as *noxia delicatis*, and unfit for Persons of better rank, *Bruerinus* discommends Goats Flesh, calling it a filthy Beast. All agree, that Hare is a Meat of hard Digestion, and so are all Venisons. *Magninus* compares Conies, to Beef, Pig, or Pork, and further saith, they are suppos'd to have some near Relation to Goats Flesh; Milk, and all that comes of Milk, as Butter, Cheese, Curds, &c. are rejected; *Piso*, and

Alto-

Altomaris, both except Affes Milk, and some others Whey. Among Fowl, all Water Fowl, Wild and Fenny Fowl, are rejected, as Meat that Burthen the Stomach, and generate ill Juices. *Rhasis* and *Magninus* discommend all Fish, and say they breed Viscosities, especially those that frequent Ponds, and standing Waters; so *Franciscus Bonsuetus* poetically defines, *lib. de Aquatilibus*.

*Nam Pisces omnes qui Stagna Lacusq; frequentant
Semper plus Succī deterioris habent.*

Bruerinus carps at Salmon, even the Prince of Fish, and by some the innocent Whiting does not go free. *Crato* disapproves of all Roots, as Carrots, Parsnips, Turnips, Radishes, &c. And *Nicholas Piso* rejects all Fruits in his Practics, and *Sanguinem Inficiunt*, saith, *Villanovanus*, and therefore *Magninus* holds, they ought not to be eaten, *Via Cibi aut magna quantitate*. Amongst Herbs to be eaten *Crato* condemns them all, *Borage*, *Bugloss*, *Fennel*, and *Parsley* excepted; but *Magninus* rejects the whole tribe, without Exception, in these Words, *Omnes Herba simpliciter mala, Via Cibi*: And, *Plautus* calls them, *Cœnas Terrestrēs*, and *Horace*, *Cœnas sine sanguine*. Others, again, condemn all Wines, especially the new, and those not well fin'd, because apt to ferment, and throw off much Tartarous Dregs.

Reg. San.

Part 3.

Cap. 31.

A Compleat Treatise of

Bear and Ale, both, are by most granted to generate the Stone ; and, I rarely ever knew any, who were extremely given to either, but what more or less did suffer by this Disease ; and, 'tis well known, that, before these Malt Liquors came to be so extravagantly in Vogue, this Distemper, in a great Measure, was a Stranger to our Climate, so that the Poets Remark is something to our Purpose.

————— *Nil spissius illa*

*Dum bibitur, nil clarius est dum mingetur unde,
Constat quod multas Faces in Corpore linquat.*

And *Henricus Abrincensis*, that old Poet, scoffingly, call'd it.

Stygia Monstrum conforme Paludi,

A monstrous Drink, like the River Styx.

'Tis true, the Poets, both, seem to allude to that *Bohemian Beer*, much in use in some Parts of *Germany* : A black, thick, drossy Drink ; neither so thin, nor fine, as our *English Beer*, but, be that as it will ; I am sure, even, our *English Malt Liquors*, especially, Ale, does not prove a wholsom Nourishment to many Constitutions, but bloats them up with an infirm Fatness, and crouds the Body with Windiness, causing Gripings, and Cholick Pains, which most shall feel the Effects of, as they begin to decline in Years. But

BUT, as to the Matter of Diet, every one must take Care to regulate it according to such Rules; as may be most agreeable to the Disposition of his Temper and Constitution. And, amongst the many Meats and Drinks, objected against by Authors, I see not, but, in Season, Time, and Place, the moderate Use of any of them may be admitted, without any Detriment to the Body; only observe, that the Product of every Clime, is most agreeable to the Constitution, and Temperature of those Bodies inhabiting that Climate, and that foreign Aliment, brings home foreign Diseases, which requires the Assistance of Foreign Medicines to remove them; and, I believe, this Age is sensible, that this Assertion does not want Proof.

THE Quantity of Diet, is, also, of great Importance; for this Maxim, although little regarded, is, notwithstanding, most certainly true. *Plures Crapula quam Gladius.* The Sword and Plague have not made that Ravage, among Mortals, as this Vice of excessive Eating and Drinking, *Qui dum invitant ad Canam efferunt ad Sepulchrum:* That while they regale you with their costly Ragous, murder you under the pretext of Kindness: But, I have done, for I know, I may as well declaim against the Winds, as endeavour to oppose

A Compleat Treatise of

the Torrent of Mens Inclinations abandon'd to this Vice, and shall close all I have to say upon the Subject of Diet, with that excellent Counsel of the *Salernian School*.

Non bibe, non sitiens; non comedes saturatus.

N E X T, in Order of the Non-naturals, is Exercise and Motion. Of excellent Advantage to the Body, if moderately and seasonably us'd; but extremely detrimental, if follow'd to Excess. Exercise greatly prevails in generating the Stone, especially, if it be upon a full Stomach; for then it over-heats the Meats, raising an undue Fermentation, thereby huffing up the Stomach, and causing an over-speedy Digestion; whereby the Chyle, scarcely concocted, is protruded out of the Stomach, press'd into the Mesentery Glands, and so passes on to the Mass of Blood; ready to fall upon the weakest Parts, and lay the Foundation of future Illnesses. All crude Chyle partake much of fix'd Salt; because it wants that Spirit and Fermentation necessary for its Refinement, which it can never obtain after it is once let into the Blood. The Purity of the Juices, being by this Means, deprav'd, and corrupted, fills the Body with a Cacochymick Load of Humours, which blunts the Activity of the Animal Spirits, and makes Way for Obstructions. Excellently well,

well, therefore, did our great Master Galen Lib. 2. de Sanit. tu- end. c. 2. exprefs himself: *Non debet* (faith this great Master of Phyfick) *cum administratur Exercitium, crudi incoctique Cibi, aut Succi Multitudo, vel in Ventriculo, vel in Vasis, contineri: unde Periculum fit, ne, prius quam per maturam Coctionem utilis fit, in omnes Animalis Partes rapiatur.*

ON the contrary, too much Sloth and Ease may nourish an impure Colluvies of Humours, and affect the feveral Parts of the Body, with a Loofeness, Tendernefs, and Flaccidity, and by Degrees, deprive the Nerves of their Strength, Firmnefs, and Elasticity.

As Sleep and Watching have Relation to thefe going before, fo they are annex'd to them in Order, and come now to be treated of. But we may obferve, that what Evils do fpring from an overlong interrupted Motion of the Body, the fame may arife from overlong continued Sleep: And immoderate Watchings or Wakings fhall caufe the fame Inconveniencies that will happen upon the uſing too much Motion: But with reſpect to the Lying; that, alſo, deſerves a particular Conſideration: For a ſoft downy Bed, which ſinks the Patient, and on all Sides preſſes againſt the Kidnies, is of all to be avoided, that find themſelves any ways inclinable to Stone or Gravel. On the contrary, a hard

Wid. *Locke*
on Educa-
tion, p. 26.

smooth Bed is much preferable, and gives a greater Coolingness to the Kidnies, it may be, already inflam'd by the Pungency of the Urinous Salts, or the Grating of Gravelly Matter against their Membranous Tunics. And the ingenious Mr. *Locke*, on his Thoughts of Education, backs my Assertion in Defence of hard Lodging. “ And, besides, the Stone, “ which has often its Rise from this warm “ Wrapping of the Kidnies, several other “ Indispositions, and that which is the Root “ of them all, a tender weakly Constitution, “ is very much owing to Down-Beds.

I COME, now, to consider what Evils may attend an over-plentiful Evacuation, or Suppression of the several Excrements to be excern'd. The Urinous Fluid I shall overpass, because, of it, I have been very prolix in *Sect. 2.* and intend to give some necessary Hints in the following Section: And as the other Excrementitious Evacuations retain'd, rather increase the Symptoms, by augmenting the Heat, than afford any real Matter for the Foundation of the Stone, so I shall discard the Examination of them also, and only remark; that as Venery, when excessive, is suppos'd, by most Authors, to have great Influence in generating the Gout, so its Consequence is, in no Disease, so pernicious as in those who are inclinable to the Stone,

Stone, and in this Case, it equally affects both Males and Females.

I N Men, the Blood abounding as well with its own Heat, as the Heat of the Seminal Spirits, is tumultuously hurried round the Body, and can scarcely be restrain'd within its proper Channels; but does frequently break out in Hæmorrhages at the Nose, especially those of a sanguine Constitution: And all agree, that more Maladies, and these more grievous, do not arise from a Suppression of any Evacuation, as from an overlong Retention of this *Balsamum vite humani generis*. And what I have said is verified from that common, but well concerted Axiom, in Philosophy: *Quod res tanto deterior evadit, cum a propria Natura recedit, quanto in statu suo nativo perfectior erat*. All of us know, that the richest and most spirituous Wines, when they do degenerate, make the sharpest Vinegar. Young Men, and those that abound with a Plenty of Animal Spirits, from a long Interruption of the Games of *Venus*, suffer much: They are often affected with a Dulness and Heaviness of Body, with acute Pains of the Head, spermatick Fevers, which are excellently well describ'd by *Sinibaldus Geneanthropus*, *Lib. 9. Tract I.* Others from a flatulent Spirit, mix'd with the *Materia Spermatica*, rage with Priapism; such was he in *Schenckius*, whose

whose *Penis* continued stiffly erected two Days after his Death ; as also that of the Roman General *Heraclitus*, of whom *Pomponius Letus*, in his *Compendium* of the *Roman History*, thus relates : *Periit novo Cladis genere, Testium nempe Folliculo sursum verso simul cum virili Membro, & semper tenso adeo, ut quoties meieret, nisi Tabula Umbilico admota prohibente, Vultum Lotio sparsisset.* And immoderate Venery is equally as dangerous ; for it destroys the more Balsamick and Spirituous Parts of the Blood, weakens the Brain and Senses, relaxes the Nerves, and consumes the Animal Spirits, which ought to preserve the fix'd Salts from betraying themselves.

IN Women, the Breaking forth of the *Catamenia Feminarum* give a great Change to the whole Body ; and about the Age of Puberty the Females are most sensibly affected with ardent Desires ; their *Menses* break forth, their Breasts swell, and Desires arise : Evident therefore it is, and daily Experience assures us, that those Women, whose *Menses* flow at the accustom'd Times, and are not subject to any Suppressions, are generally of a strong and hale Constitution, a brisk and lively Genius, a florid and pleasant Countenance, have enough of natural Warmth, and as *Terence* expresses it, have, *Color verus, Corpus solidum, & Succus plenum.* And, according
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to this Description, what our great Master *Galen* saith upon this Subject, is most consensaneous to Reason; *Mulierem sanam ex Mensibus judicandum.* But from their Suppression, whether in Virgins, Women, or Widows, great are the Inconveniencies that follow. They grow pale in Countenance, are of a fearful Disposition, look gastly, seem bloodless, and are of a torpid unactive Habit of Body. *Rodericus a Castro Lusitanus*, in his 2d Book *de Morbis Mulier. Cap. 3.* sums up the Evils that attend a Suppression in these Words, “ Ob suppressionem Mensium & Venerem omissam, timidæ, mœstia, anxia, verecundæ, suspitiosæ, languentes, Confilii inopes, cum summa Vitæ & Rerum meliorum Desperatione.” And in the 34th Chapter of the same Book, *de Uteri Calculo*, he assigns the same Cause to produce a Stone in the Womb, which generates it in the Bladder, “ Causæ sunt eadem, quæ Calculi Vessicæ, cui sane Causæ Fomitum præbet Retentio Menstruorum, aut eorundem Suppressio.

AND, an intemperate Flux, or unseasonable, when it happens before the accustomed Times, is equally as dangerous; for Crudities of the Stomach, Paleness of the Countenance, Want of Appetite, and a Weakness of the whole Body, shall inevitably follow.

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THIS Distemper may be also Hereditary; and that there are such, is past all Dispute. For as *Fernelius* words it, *lib. 1. Cap 2. Path. Quocunque etiam morbo Pater cum generat, tenetur, cum Semine transfert in Prolem.* Observe what Disease the Father labours under when he begets him, the same you may perceive in his Son after him; and Children are as well Inheritors of their Father's Diseases, as their Estates. Nay, the Poet very elegantly contends, that even the Vices, or Virtues of Parents, are translated unto their Children.

Et Patrum in Natos abeunt cum Semine Mores.

AND Hereditary Gouts, King's-Evil, Stone, and Gravel, are very notorious, and, which, betray themselves at certain Times, and under several Disguises, sooner in some than others, and mimicking or appearing in the Shapes of other Distempers, incident to those Parts they shall affect, which depends chiefly on the Discrasie of the Blood, and the Constitution of the several Parts.

THE Passions are the last of the Non-naturals, that concern our present Inquiry; and what extraordinary Commotions and Perturbations their Disorder raises in the Animal Oeconomy, I am to consider in this Place.

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The Effects they produce in our Bodies, is best discoverable from the Alterations they make in the several Juices.

SORROW, Fear, and Sadness, have all the same Effects in producing Diseases. They fill the Imagination with dejecting Thoughts, and depress the Motion of the Animal Spirits; whereby all the Fluids in the Body are retarded in their Circulation, which, consequently, must cause a great Obstruction in the several Juices to be secreted. Besides, they hinder Digestion, breed Crudities, sharpen the Humours, and accumulate much Tarry Matter; for all dejecting Passions generate much of Acidity, by depraving the several Digestions of the Stomach and Bowels, which give a Check to the Animal Spirits, and precipitates the fix'd Salts of the Urine either in the Kidnies, or Bladder, which, by the Admission of the serous *Lympha*, generates the Stone.

ANGER, when inordinate, may truly be call'd a short Madness, for being an active Passion, and when driven on to Extremes, (like unbridled Horses,) knowing no Bounds, may overstretch the Spirits. How often have we observ'd some Persons, so vehemently disturb'd at some Miscarriage, or against some Accident, that, for the present they have not only

only lost the Use of their Reason, but Speech also, by that violent Agitation, and extraordinary Rage of the Blood and Spirits; so that they have been oblig'd to continue some Time mute to recover them again: Nay, in extreme Rarefactions, upon sudden Checks, and where the Matter hath been of mighty Importance, the tender Filaments that rivet the Soul to the Brain, have been so disconcerted, that they have put an everlasting Stop to all the Springs of Nature. But if we consider it in a lesser Degree of Rage, we shall still find it egregiously detrimental to the Body; for by inordinately increasing the Motion of the Animal Fluids, it may drive the Humours as a Torrent upon the Kidnies, which being weak and unable to bear such a pressing Load, will greatly damage the Compages of their Glands, and the slender Fibers of those Bowels, being, by this means, infirm'd, may not so well be enabled to expel all those Corpuscles of Sand with the Serum, but some remaining, may concrete, and form gravelly Matter, or little Stones either in the Substance, or Sinus of the Kidnies. Lastly, I shall speak of Study, as a Cause, which claims a very great share in generating both Stone and Gravel. And, indeed, the most active Exercise does not, by far, exhaust the Spirits so much, as constant Study; and by Experience, I can speak it, that my self
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has labour'd in my Study, till my very Legs have trembled under me. We most commonly observe, that Men of great Learning, those, who are remarkable for a mastery in Languages, are more frequently arrested with this Malady, than Idiots, or Fools, who seldom feel the Pangs and Throws, that attend them that labour under it. In the most exalted Genius's, and Men of the loftiest Capacities, we commonly perceive two inseparable Disasters to attend them; the first is, a weak Stomach, the other an infirm Spleen. Now, the Stomach being an active Bowel, and employ'd by our Parent Nature, for the Digestion and Perfection of the Fluids, destined for the Nourishment of the several Parts; and much Spirits being absolutely necessary to support its Action of Chylification, it necessarily follows, that upon the Ablation of the Animal Spirits, from what Cause soever, the Stomach will suffer, and become weak and infirm: And, upon this Account it is, that Persons who apply themselves greatly to Study, are commonly reputed to have puny Stomachs; or, if they do by Chance eat heartily, and make a good Meal, it commonly turns to Crudities, and is attended with Obstructions. And daily Experience assures us, that some of the Bowels shall sooner lose their Tone than the rest; and others are naturally, and it may be originally weaker, which

which will render that, or those Parts, more liable, to those Distempers incident thereto; and, if we suppose any of the Bowels weaker than the rest, upon an equal Sublation of the Spirits of the several Parts, the weakest will sustain a double Loss, for being more effete and languid before than the rest, it must suffer in Proportion with the rest, by that general Deficiency. And we may easily discover what Influence the Non-naturals will, naturally, have upon the Effeteness and Languidness of such Parts. Thus we observe, (in those that have a weak Texture of Lungs,) that, upon taking Cold, they shall be seiz'd with Coughs, Wheezings, Asthma's, Inflammations, &c. Others, who have stronger Lungs, but more curious Blood, and finer Spirits, shall, upon taking Cold, inevitably suffer from Fevers of one Kind or other; or, sometimes Agues. Others, subject to weak Kidnies, shall, upon catching Cold, be tortur'd with grievous Nephritick Paroxisms; The external Air always taking the Advantage of the weakest Part, and exciting its Tragedy under the Appearance of those Diseases incident to that Part; and the same may be said of Hard-Drinking, excessive Motion, and the rest of the Non-naturals.



S E C T. VI.

Of the Difference, Magnitude, and Number of Stones in Man's Body.

TH O' Stones may be found in all Parts of the Body, as we have clearly demonstrated in the Third Section, yet, I will confine my self to an Examination of those only that affect the Kidnies and Bladder. The Variety, Magnitude, and Number of which, very much alter, according to the Subject they reside in, and Part or Parts they affect; and they shall arrive to a greater Bigness in some, sooner than to the same Magnitude in others. This Difference of Increase, in different Subjects, is principally owing, and, indeed, chiefly depending, upon the Elasticity, or Strength, of the Sphincter Muscle of the Bladder. And, here give me Leave, a little to digress, upon the Manner how the Urinous Fluid is excern'd from the Bladder. We are to consider in the Action of Making Urine, That every Time the Sphincter Muscle, with its circular Nerves, is relax'd, at the same Time, the Longitudinal Nerves of the Bladder are contracted, or drawn nearer their

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Beginnings, which, consequently, drawing the Bottom of this Bowel to its Neck, must force the Urine out at the Passage of the *Urethra*; and to this Action do concur the Assistance of the Diaphragm, and Compressure of the Abdominal Muscles: And tho' I have seen several Reasons, why most People after they have done making Urine, commonly do suffer a Horror or Shivering to glide all over the Body, yet I perceive not any, that better fits my Opinion, than the following: That the pungent Salts of the Urine, being beaten back by the Elastick Strength of the Sphincter Muscle retracting it self, does briskly strike the Nervous Coat of the Bladder; which Percussion communicates the same Sensation to the adjacent Nerves, and they again to the rest, by that equal Consent lodg'd in all those fine and capillary Fibres, that are disseminated through the whole Body. For, if we admit the most plausible Reason yet given, *viz.* That the ambient Air being receiv'd, or naturally pressing into the Bladder, (I suppose to fill up the *Vacuum*, upon the Defect of Urine,) does cause that Horror, we generally perceive immediately to follow, upon having done making Urine: Then the Horror must be considerably greater in Winter, than Summer; and, besides, the same Inconveniency might as well happen to the Lungs in Inspiration; both which we least of all see

see to happen. Besides, if the Air does enter the *Urethra*, we may naturally suppose, it receives so much Warmth at its Entrance, as not to be able any ways to incommode this Bowel. And this Repercussion of the Urinous Salts, thus accounted for, is the Reason, why most People, labouring under Stone and Gravel, but especially Stone, perceive a sharp cutting Pain in the Passage of the Glands near its End, just about the Excretion of the last Drop of Urine. Now, tho' some have suppos'd this cutting Pain to proceed from a Sharpness of Urine, or Hotness of this Fluid, excoriating the Passage of the *Urethra*, near its End, yet most improperly: For I might ask, How comes it to pass, that the Pain is not continual, as in a Gonorrhea, or Clap, where an Excoriation of the *Urethra* most commonly happens. For I have observ'd in the aforesaid Affection, that the Patient hath been upon the Rack all the Time his Urine was coming from him; which we seldom see to happen, in Cases of the Stone and Gravel, till the Patient has just done, and then the Pain is exquisite. But a Question here may very fitly arise, why this troublesome Sensation does not equally affect well People, as well as those labouring under Stone and Gravel, since the same Causes ought to produce the same Effects? The Answer to this Question, thus put, is very plain and easy,

easy, *viz*, That when the Organs, or Instruments serving to the Ministration of Causes, are differently affected, the Effects resulting from the Indisposition of those Organs, will be different, tho' proceeding from the same Cause: So that Gravel, being impregnated with the Urine, makes the Sensation in the Nervous Coat of the Bladder, upon the Retraction of the Sphincter Muscle, more troublesome, than when Urine alone simply acts upon that Membrane; neither does the Dolor rest in the Bladder, but excites a very painful Strangury at the Extremity of the Glands. Indeed, where an Exulceration of the Bladder accompanies either Stone or Gravel, as not seldom happens to the former, then is the Pain continual, as in a Gonorrhea, and very torturing, from the Exit of the first Drop of Urine, till the last is excern'd.

PEOPLE, in making Urine, ought to be very careful, to emit, from the Bladder, all that Nature designs to be ejected at that Time; for we have known sad Consequences to have happen'd upon a voluntary Suppression of Urine; when some People have been compell'd through Modesty, or Bashfulness, to restrain it longer than Nature design'd. While in the Country, I was an Eye-Witness of a most dismal Tragedy, occasion'd from a Suppression of Urine: A Gentleman in Company

pany with Ladies, and unwilling to make any Disturbance by going out, against the Bent of Inclination, restrain'd the Sphincter Muscle from its Office, when Nature loudly call'd for an Exit to the Urine : He, being uneasy, presently retir'd, and went Home, and in the Evening was seiz'd with such a total Suppression, in good Earnest, that, I believe, all the Diureticks in the Globe would not have help'd him ; but, he, after a very miserable Languishing of Thirteen Days, had the Happiness to quit the Scene of this Mortal Life : And if a total Suppression, but for a little Space of Time, could produce such dangerous Consequences, as not to be remediable, we have Reason to fear, that a partial Evacuation will not be without its Inconveniencies. Such another Case relates Dr. *Baynard*, in his History of the *Cold Bath*, Part II. p. 350. Of a young Lady invited to her Sister's Labour, and riding behind a Man-Servant thither, her Over-bashfulness prevail'd with her to retain her Urine so long, that the Consequence of that Suppression cost the Lady her Life. But, now, whether this fatal Consequence was owing to her with-holding her Urine, or to some other previous Indisposition of the Bladder, from this Gentleman's Relation is not easy to conjecture. There seems to be a sort of Notice given when to Urine, by the pungent Salts of this Fluid stimulating the Circular Nerves of the

Sphincter Muscle to Excretion, and this Stimulation, or Pungency is to remind us of our Duty, that we may unload the Bladder from its Pressure, by giving a free Passage to this Fluid.

As to the Bigness of Stones, in respect of Parts, those of the Kidnies are always lesser than these in the Bladder, and for the most Part, not always, those in the Bladder, receiv'd their first Rudiments in the Kidnies, which, from the *Pelvis*, by the Ureters, did pass into the Bladder; now, if the muscular Fibres of the aforesaid Bowel, be strong enough to contract themselves, for the Expulsion of the small *Arenula*, or little Stones, all may do well, but, if not, their Stay may increase them to an exceeding great Magnitude. Of some, I have read, that have been extracted from the Bladder, which weigh'd thirty two Ounces; and, *Hildanus*, in his Observations, reports, of one that weigh'd twenty two Ounces. But, the largest I ever saw, or indeed, heard of, is that prodigious great one, reserv'd, in the Charity Hospital at *Paris*, as a choice Rarity; which, when extracted, weigh'd Fifty one Ounces, but the Gentleman, from whom it was taken, died under the Operation. The least Stones in Children, are about the bigness of large Pease, some as great as Cherries, and these,
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again, may be as large as Apricocks, or Peaches. In Men, grown in Years, they are found of all the above mention'd Sizes, and and many times as large as an Hen's Egg, and sometimes, tho' rarely, as big as a large Quince, tho' this is a monstrous size, and not common to any Subject.

As, to the Color of Stones; there is as great Variety and Difference in these of the Kidnies and Bladder, as among those that receive their Generation in Rivers. They may be White, Red, Yellow, inclining to an Orange, of a pale Green. I once saw one White, all bespeckled with Red Veins, very beautiful to the Eye, sometimes they may be of an Ash-Color, Dusky, Black, which Diversity of Colours, is owing chiefly, tho' not intirely, to the Difference of Urines, tho' many Times the Looseness or Compactedness of the Pores of Stones, may contribute not a little to the Alteration of their Colour: With Respect to their Difference, as to Shape, that is owing chiefly to the Figures or Points of the minute Particles of those Salts, or Sands, they are derived from. Round Globular Atoms, commonly, form rough Stones, with unequal Surfaces, tho' of a Globular Figure: But, if the minute Particles, constituting the Stone, be Triangular, the Stones resulting from those Figures, shall

have smooth Surfaces, and less unequal. It is observable, that there are many more smooth Stones, with polish'd Surfaces, found in the Body of Man; than rough and uneven in the same Subject, tho' this Difference may owe its original to the viscid *Lympha*, that combines the Corpuscles, constituting the Stone more strictly or laxly together. But, the Surfaces of Stones are not always of a Resemblance, at least, not, exactly, agreeable to the Figures and Modes of those Bodies, they are form'd from, for the Bladder, the Urine, and the Pressure, or jostling of other Bodies, may make a considerable Alteration, both in the Surfaces, and Forms of particular Stones. Besides, the Gravity of the Sand sometimes pressing, or subsiding firmly, to the bottom of the Bladder, of round Bodies, may form a Stone flat, and of an equal Surface.

THE Number of Stones are also as different as their Magnitude. Some, shall have a many small Stones in the Bladder, to the number of a Dozen. I once, in Company, heard a Gentleman aver, that he had, at Times, voided, by Urine, six hundred actual Stones; the least of which, as he then affirm'd, exceeded a White Pea in Bigness, but he was a Traveller. Of many, I have heard, that have had two or three in the Bladder, and those of a considerable Greatness;

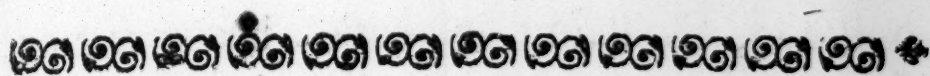
ness; but, for the most part, if the Stone be large, it is but one, unless pebbelous Matter, breaking off by some great fall, or sudden Concussion of the Body, lay the Foundation of others: The seperated Parts acquiring new Matter from the sandy Sediment of the Urine; may, with the Addition of the concreting *Mucous* or *Lympha*, increase, and in time, grow into a large Stone, not much less than that, from which it took its Original.

WHEN this Accident happens, it commonly, greatly incommodes the Patient; for, the former, being render'd unequal in its Angles, by parting with some of its substance, and, thereby, being indued, with sharp pointed Corners, may, upon any Motion, grate against the Nervous Tunics of the Bladder, and wound its tender Membranes, which being expos'd to the Urine, saturated with hot fretting Salts, may excite dreadful Pains, be a frequent Cause of making bloody Urine, and, which, if not timely prevented, by proper Applications, will, certainly, lay the Foundation of an incurable Ulcer. These Symptoms, we most commonly see, to happen to Gentlemen, after riding long Journies. The excessive Motion, that attends Riding, have given such a Disturbance to the Stone, that, if Nature had been strong enough to
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have encounter'd with its Enemy, and the Passages large enough to have received him, no doubt, the Calculous Matter, so disturbing to its Guest, had made its Exit: But, if Obstructions hinder, and its Greatness be incapable of entering the narrow Passage of the *Urethra*; nothing but the Hand of some skilful Lythotomist (after the best Medicines have been us'd in vain) can be a means to free the miserable Patient from his Thralldom; and, where there is a necessity of undergoing this painful Operation of Section; in my Opinion, the sooner he submits to it, the better, for its strongly presumable, that length of Time, and Delays, will only serve to encrease the Danger, by exciting frequent Paroxisms, that will weaken the Constitution, and augment the Symptoms, and so at last, when he is least able to bear it, will be oblig'd, rather to suffer any Torture, than bear his present Misery.

Now, as this Operation is always attended with such imminent Danger, as, most commonly, to bring the Life of the Patient into a doubtful State, as to his Recovery; so ought it to be the Care of every skilful Operator, to advertise the Patient, or his Friends, of his real Thoughts, as to the Consequence of the Operation, that whatever shall succeed (whether Life or Death) nothing may be objected

objected as a Blemish to his Reputation. There are some Symptoms, that indicate an impossibility of Recovery, after Section, which shall be consider'd in their proper Place.



S E C T. VII.

Of the Diagnostic Signs of Gravel and Stones, in the Kidnies and Bladder.

TH E Symptoms that attend this Malady, are distinguish'd, first, by a Complaint of a fix'd Pain, about the Region of the Loins. If the Pain be very dull, and, as it were, a benumbing Pain, with a Weight upon the Part; it argues, the Stone lodg'd in the substance of the Kidney, which Obtuseness, or Dulness of Pain, does proceed from the Parenchyma of those Parts, for all Parts that are Parenchymatous suffer less Pain from those Diseases they labour under, than others, whose nervous Fibres are more expos'd to the Accidents that afflict them; and, this Observation yet more plainly appears, from a Consideration of those Affections that are incident to the Liver, and Spleen; both Parenchymatous Bowels. That
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all Pains that attend either, are of an obtuse, or benumbing Nature, and this we observe frequently in the Schirrosities of the Liver, with Respect to the former Bowel, as also in the *Hypochondria Melancholia*, in Relation to the latter. When the Stone falls into the *Pelvis*, or *Bason*, the Pain is increas'd, becomes more sharp and cutting; and, with the Stone, the Pain descends a little; by and by it comes into the Ureter; (always pressing forwards according to the Tendency of Nature) upon which, the Pain increases, and becomes intolerable, especially, if the Stone be larger, than can well pass the Ureter, for then it tears, and puts the Patient to excessive Torture. To these Symptoms succeed a Difficulty of walking upright; the Nerves of the Ureters, from the extreme pungency of the Stone, being convuls'd, and drawn together. A great Heat about the Loins: A Torpor of the Thigh and Leg, from the affected Ureter, pressing against the *Musculus Psoas* of the same side. Under these dismal Circumstances, the Testicle of the afflicted Side is retracted, and drawn more up, than the other, which happens from the Consent of Nerves disseminated in both the Kidnies and Testicles, and this I look upon, to be as certain a Pathogmonic Sign, to distinguish the Stone in the Kidnies, from the Cholick Pain, tho' seated never so advantageously to deceive, for if
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the Pain be in the Intestines, tho never so opposite to the Kidney, let but the Patient observe the situation of his Testicles, and he may easily discern, whether it be the Stone in the Kidney, or the Cholick Pain only; if the former, one side only is drawn up, and inclin'd to the affected Side; but if the latter, then he may observe both Stones, equally retracted, and a Contraction equally of the Scrotum, for all Pains that are grievous and tormenting, as, also, all Pleasures, that are excessively pleasing, equally cause a Retraction of the Stones, and a Contraction of the Scrotum. To these Symptoms, we may add a Strangury, from a Convulsion of the Spincter Muscle of the Bladder, and not, as some ignorantly suppose, from an Obstruction of the affected Ureter, for the Urine can as well flow by one Ureter as another, tho' not in that Quantity. What Urine can be excern'd under the Painfulness of these Symptoms, is generally limpid, clear, and watry. A Nauseousness is an inseparable Symptom; when Things come to this pass, which, when the Pain is very violent, frequently terminates in a downright Vomiting. As to the Contents that comes off from the Stomach, nothing of Certainty can be indicated therefrom, for, I have observ'd those, troubled with the Stone and Gravel, to vomit as much Choler, as those labouring under the most violent

violent Symptoms of the Cholick ; only by the following Observation we may learn to distinguish with some Certainty, That the Cholick moves from Part to Part, and is sometimes more before, sometimes more behind, otherwhiles higher, then again lower, now in the Back, then in the Belly or Sides. But the Stone generally keeps its Place, unless it pass the Ureter, and so fall into the Bladder ; which Progress, when it makes, is attended, very often, (especially if the Stone be large, and have, in its Passage from the Kidnies, lacerated any Part,) with Bloody Urine, which many Times is thick, turbid, with a dark, obfuscate, sandy, Sediment. When it is got into the Bladder, all the Symptoms abate, and the Patient, for the present, finds himself easy. The Distemper, having chang'd its Seat, with it, changes, in a great Measure, its Symptoms also ; for, after its Arrival in the Bladder, in the Beginning of the first Paroxysm, the Urine is thin, pale, clear, and watry : There is an Itching about the Region of the *Pubis*, and at the End of the *Membrum Virile* ; a Weight presses some about the Region of the Groins, which, by others, is perceiv'd, more or less, upon the *Pyrinaum*. As the Stone is greater or lesser, so the Symptoms are more or less grievous. The Patient inclines to make Water, strives,
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and, with much ado, makes it by Drops, with great Heat and Pain, which is most sensible about the End of the Glands; by and by, the same Inclination to Urine seizes him again, and he endeavours, but finds his Labour as fruitless as before, and so, every Interval of Time, he continues endeavouring, striving, and straining, but all to no Purpose; a Spoonful or two of Urine being the most he can get away, and then is always a looking, and peeping, and spying into the Urinal, to observe what Gravel, or little Stones, he can perceive in that small Quantity. Indeed, I cannot perceive, after all, any more certain Diagnostic, to determine, whether or not, a Stone be lodg'd in the Bladder, than by searching with the Catheter. And, as for a Stone in the Kidnies, it is certain, an Ulcer in the Bowels, seated opposite to either of the Kidnies, will deceive most of the above-mention'd Symptoms; and I was concern'd with a Patient, where Five Physicians, of no mean Rank, were before me, and all deceiv'd, and my self also; but then the Patient had been troubled with Gravel some Time before, and there were strong Indications to conclude a Stone in the Kidnies, when such evident Proofs had preceded. However, the Ulcer turn'd to a Gangrene, and he dyed; nor was it possible to recover him, if we had known it to be an Ulcer, his Obstinacy was so great and

and ungovernable, both in Point of Diet and Medicine; and being, at the Desire of his Friends, open'd, we could perceive little or no Gravel, in either Kidnies or Bladder; but, tracing over the Guts, we, opposite to the Left Kidney, perceiv'd a Sphaçelation. Some Authors mention, that if the Finger be forc'd up the *Anus*, and press'd towards the Bladder, if a Stone be there, it will feel hard; but this Method of searching for a Stone, will not always hold good; and there may be a Stone in the Bladder, and not to be felt by this Means. I rather think, that the sandy Sediment that settles to the Sides of the Urinal, as also the Disturbance Hard-Riding gives to the Parts afflicted with this Malady, are the strongest Proofs that do conclude for the Stone; tho' I have known some, considerably, relieved by gentle Riding, when no other Means could give them Ease. Sometimes it happens, that the Stone, by over-violent Action, or Motion, does ulcerate the Kidnies or Bladder, which Symptom, most certainly, may be concluded to happen to either Bowel, from the following Indications. First, The Urine flows bloody, and the Pain is excruciating about the Loins, if in the

Kidnies; or Os Pubis, if in the Bladder: Some

Time after, the Urine shall abound with thin

Flakes, or Filaments, not unlike little Skins,

or the minute Parings of Leather; then fol-

lows

Vid. Hyp.
Aphor.

lib. 4. A-
phor. 81.

lows a purulent *Pus*, which, when it proceeds from the Bladder, smells stronger, and is more offensive, than if it comes from the Kidnies; and in great Exulcerations of the Bladder, I have known the whole Urinous Fluid, congeal'd into a Substance, like Size. And sometime ago, I was concern'd for a Gentleman, whose whole Mass of Urine (a little while after it had been expos'd to the Air) was, continually, converted into a Slime, not unlike Frog-spawn, for Viscidness, and Ropiness, which, certainly, argued a great Decay or Consumption of the foresaid Bowel. But, some may object, perhaps, that, it is not possible, this slimy Matter could proceed all from the Bladder it self, and the Quantity excern'd, (which, truly, was great and frequent) could not be supply'd so often, nor for so long a Time (for he remain'd near a Twelvemonth, under this Disaster) from this Bowel, and therefore it is much more reasonable to suppose, that, the more sizy Part of the Serum was resolv'd, by the Heat of the Blood, in its Circulation, which passing off by Urine, might, by the Admission of the Nitrous Particles of the Air, be condens'd into this viscid Substance. To all which, I can answer, That I should not have swerv'd from this Opinion; (and does believe, that in *Morbid* Bodies, the Urine may acquire such a viscid Disposition) had I not been present, my self,

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at the opening of this Man after his Demise. In our Inspection, we found the Kidnies little alter'd from their natural Shape, and Position, no Wounds in their Membranes or Vessels, neither any Ulcer in their Substance, but tracing the Ureters, we perceived a Blackness about the middle of the Right, which, no doubt, formerly, had been ulcerated, but, now, was dry'd up. In the Bladder, we found two Stones. The one near as large as a Walnut, the other, not larger than a Hazle-Nut. But, we observ'd the Bladder, it self, so shrivel'd up, and its Membranes so thin withal, that in all my Life, I never saw a blown Bladder so transparent, nor could it scarce bear to be touch'd, without tearing, which made me greatly wonder, that the Weight of the Stones, did not break those fine and capillary Fibres, that compos'd its Membranes. From this Example, I think, it is evident, that the Bladder, as well as other Parts, is subject to decay; and, whatever may be said in support of the Serum, giving Viscidness to the Urine, (which, certainly, in its natural State, it never can do, because we never see any such Effects from it) yet, I am sure the Bladder did afford a Share of the congealing Matter, or, else, whence came such a Consumption of its *Parenchyma*; Indeed, some Authors, of no mean Credit

Credit, aver, that, in Impostumations of the Breast or Empyema's, it is no unusual Thing for purulent Matter to be translated to the Kidnies, and to pass off by Urine. But, tho' I shall ingeniously confess, I never, my self, knew such a Case to happen in my Practice; and have only the Authority of some eminent Gentlemen, deliver'd in their Writings to support this Assertion of translating such gross Matter by unknown Vessels to the Kidnies, yet (granting the Possibility of such a Translation) rarely can any Pus be amanded, to the Kidnies, from any Part: but, that, some Symptoms previously indicating an Aposteme in those Parts, by diligent Application may be observ'd, and then we shall no longer need be perplex'd with this Difficulty, viz. Whether it comes from the Breast, or other Parts, or directly from the Kidnies, or Bladder. It is a common distinctive Sign, taken notice of by most Authors, treating of Stone and Cholick, that the former is always easiest upon a full Stomach, and the latter worse, but, I have observ'd quite the Reverse, and that a certain Person, labouring under the Stone in the left Kidney, could never be easy after a plentiful Feeding: When the Stone is large and rough, it often puts the Patient to extreme Torture, stretching him as on a Rack, and grating upon the nervous Tunicle of the Bladder, may convulse its

Sphincter Muscle, and be the Cause of great Inconveniencies. Hence follows a Suppression of Urine, which continuing long, heats the Body, to which succeeds Fevers of the Inflammatory Kind, troubling the Spirits with Deliriums, Phrensies, and great Thirsts; the Body becomes all over bloated, and the Legs Pit. Under these dismal Circumstances, nothing can relieve him from certain Death; but a free Passage to the Urine. It being the Opinion of *Galen*, and several other learned Men, since his time, that no Man was ever able to endure a total Suppression of Urine above Fourteen Days. The Diagnosticks that attend the Gravel are the same with those that accompany the Stone: and what hath been said in tracing out the Symptoms of the one, may equally be applied in discerning those of the other; only, observe, that in calculous Cases, the Pains are always more grievous and intolerable. In the latter, Gravel always appears in the Urine, and adheres to the side of the Urinal, sometime before any Pain shall give Disturbance to the Parts. Besides, when Gravel is only in Fault, great Loads of Sand shall croud the Urine, and be excern'd with it in the Paroxysm, which is otherwise in the Stone, for then the Urine is Limpid, Clear, and Watery. Sometimes the Wind affects the Bowels, at the same time that Gravel disturbs the Kidnies; which

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which Complication, most properly, may be call'd the Stone Cholick.

LASTLY, It is no uncommon Thing for the Gout to leave its proper Mansion the Limbs, and wander up into the Stomach, and, sometimes, in its Peregrinations, may fall upon the Kidnies or Bladder, and there excite the same Symptoms, tho' milder, than what is usual in the Stone. When the Gout attacks either Kidnies, or Bladder, in the Beginning, the Pain is rather uneasy than tormenting, but sometime after it rages with greater Violence, as in the Stone; and, instead of Sand, which always accompanies the Gravel, there appears in the Urine, a White Tophacious Pouder, not unlike prepared Coral; and I look upon this to be the only material Distinctive Sign to judge of the Gout in the Kidnies, or Bladder, from the Stone, or Gravel lodg'd in either.





S E C T. VIII.

Of the Prognosticks.

I SHALL close this Part with an Examination of the several Prognosticks, which indicate what will be the Fate of the Patient, under the present Circumstances. I look upon all, or most Paroxisms, of Stone, or Gravel, whether in Kidnies or Bladder, arising without any evident Cause, to be only the Efforts of Nature's Endeavours, to unburthen her self of that Load, that oppresses her. The Prognosticks, therefore, must be taken from the different Force the Symptoms put on, when they do appear, the Intervals of Time, they discontinue their Appearance, and the greater or lesser Impressions they make upon the Constitution of the Patient. It is the Opinion of *Hippocrates* that Children and Young People are more subject to Stone and Gravel in the Bladder, and those more advanc'd in Years, to both, in the Kidnies. The old Man applies *Calculi Vessicae* to Children, and in the 31 Aphorism to the same Book, he uses *Nephritides*, to express

Aph. 26.
lib. 3.

it in People more ripe in Years; But, however, this might be in the Times of *Hippocrates*, and in the Climate under which he liv'd; I am sure, the contrary appears in our Days, but too evident to want any Proof to support it; For, I believe, for one Child or Boy, that suffers under this afflicting Malady, you shall observe five Men or Women labouring under the same evil; tho', indeed, Women are not so naturally addicted to the Generation of Stone or Gravel, as Men are; as appears manifestly from the few that are Cut for the Stone of the former; in comparison of the latter, because the Urinary Passage being freer and more open, in that Sex than in Men, discharges all small Stones and Gravel from the Bladder, before they arrive to any considerable Greatness. The Stone seated in either Part is a grievous Malady, and, if Hereditary, is by all judged incurable, it may admit of Palliation, and some considerable Relief may be given, for some time to the Miserable, by proper Medicines: But, even Section, in this Case, will not avail him more, than, for sometime, to Privilege him from his Torture. It will generate again, and in Time, arrive to as great or greater Bigness than before: and this second Attempt, to extract it by Section, (should the unhappy Patient be endued with that firmness of Courage and Resolution necessary to undergo it) will be attended

with more Danger, from the Callosity they may be oblig'd to cut near, or perhaps upon. By Reason of the Symptoms, that attend, in some, it is worse than in others, for where the Stone is large, rough, and unequal, there it brings great Torment and Misery to the Patient. If the Asperities, or Motion of the Stone ulcerate the Kidnies, it is a dangerous Sign, creating great Torture, cutting Pains, Fevers, Convulsions, Lethargies, great Weaknesses, with a total Suppression of Urine, and if these Symptoms continue, obstinately, to evade the Force of the best Remedies; all hopes of Recovery, in a little time, will vanish. The same racking Disorders I have observ'd to attend a Stone in the Bladder, but rarely did I ever know the Patient recover, especially, if he was advanced in Years. Indeed, one particular Instance I can give, of a Person that labour'd under all the above mention'd Symptoms, which was my Father, and yet recover'd after he was above sixty, and had suffered under a total suppression of Urine for nine Days. It is a better Sign, if a thin pale Urine attend the Pain in the Beginning, afterwards, it grows thick and turbid, with a sandy Sediment, for those Symptoms denote the Stone of a friable Nature; and easily dissolvable. If the Stone be so large as to adhere to the Ureter, in its Passage from the Kidney to the Bladder, the
Pain

Pain will be extreme and racking, Vomiting will ensue in the Extremity of the Fit, and if it does not pass, there can be no means us'd that can prevent Death. I was present at the opening of a Gentleman, who died of the Stone; and we examin'd, with all Diligence, both the right Kidney and Bladder, but found no Appearance of any Stone, or scarce Gravel in either, but pressing my Finger upon the Bladder, near its Neck, I felt, in the Ureter, about its oblique Infertion, a large Stone, near of the Bigness of a Filbert, which, when we took out, was all Bloody, and the Sinus we took it from, had near a Spoonful of the same in it, and, it is remarkable, that five days before he died, he urin'd near three Spoonfuls of Bloody Urine, with some little Knots of Real Blood in it. I have many times observ'd, that when the Pain hath been most sharp, afflicting, and of long Continuance, that a Delirium hath seiz'd the Patient, and had not Nature, beyond Expectation, assisted in removing the Obstruction, the unfortunate Patient had inevitably lost his Life. It portends well to the Patient, when Plenty of Sand or Gravel crouds the Urine, and all the Symptoms grow milder, when the Paroxisms begin to croud in upon one another, and daily vex him with their torturing Symptoms; the sooner he submits to the Operation of Lythotomy the better, especi-

especially, if he find no relief from Medicines. With respect to the Magnitude, or Number of Stones, that is also of great Importance, all Stones the less they be the safer, and tho' there be Numbers, if they be small, it is better, and this is verified in Respect of Section. Large Stones are ever dangerous, and the Obligation we are under to enlarge, in Lithotomy, the Orifice of the Wound, according to the Magnitude of the Stone, renders this Operation still more dangerous. Let the Stone be never so great, if it be of a friable britlish Nature, the Patient not abounding with gross Humors, not advanc'd in Years, nor worn out with Nephritick Paroxisms, of a strong Constitution, by proper Medicines, it may be dissolved. But, a Stone that is wrap'd up in a Capsule, and adheres to the *Membrana Vessicæ*, as I once saw to happen, is not to be medled with, and exceeding large, hard, polish'd, Stones, come under the same Predicament, and cannot safely be undertaken by either Pharmacy or Lythotomy. It is more easy to extract Stones from Women than Men. If much Pus be voided with the Urine, and a stimulating Pain in either the Groines, or Region of the Loins, such Symptoms indicate an Ulcer in the Part affected, that is, in either the Kidnies or Bladder, and may be concluded dangerous, tho' Wounds or Ulcers in the Kidnies, or Bladder

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der are not mortal, unless in Old Men, or those of a bad Habit of Body. When the Paroxysm arises from overmuch Action, Motion or Riding, it is not dangerous, unless the Stone Change its Seat into a worse, and then the Detriment may greatly disturb the Patient. If the Stone in the Bladder, be so large as not to be able to pass the Urethra, the best Remedies having been us'd in vain, Lythotomy is the only Relief the Patient can expect, which Operation he may very safely undergo, provided an Inflammation or Gangreen of the Bladder, does not succeed the Wound made for the Extraction of the Stone. A Stone in the Kidney, larger than can pass the Ureter, will, in time, kill the Patient, if not dissolved, no Chyrurgical Means being of any Service in this Case; because, whatever some may pretend concerning Nephrotomy, or cutting in the Kidney for the Extraction of the Stone, it is a most dangerous, if not a deadly Attempt; and, therefore, ought not to be undertaken by any who value their Reputation: For in the Performance of this dangerous Operation, the Operator is oblig'd to cut into the Back, and so thro' the Great Muscles, and Vessels, and so to proceed through that Load of Fat that immediately covers the Kidney; and, lastly, to cut into the Substance of the Kidney it self, and extract the Stones, or
Mu-

Mucous which indicated this Operation necessary. But, I see not how this great Operation can be perform'd without such manifest Hazard, as no Man that values his Reputation or Conscience will undertake. And, as I never did hear but of one Case where the Operator succeeded, and the Patient Recover'd, so, I think, I cannot do better than conclude this Section, and Part with a Relation of that Matter, and the ingenious Reasonings consequent thereupon. The Relator is, Mr. *Charles Bernard*, who in the *Philosophical Transactions*, gives the following Account.

“ Mr. *Hobson*, Consul for the *English* at
 “ *Venice*, having been long afflicted with the
 “ Stone in the Kidney, was at length at-
 “ tacked with a Fit, of that Duration and
 “ Violence, that it reduc'd him almost to
 “ Despair; and finding no Relief from any
 “ Means that had been us'd, and being un-
 “ der the greatest Extremity of Pain ima-
 “ ginable, he address'd himself to *Dominicus*
 “ *de Marchettis*, a famous and experienc'd
 “ Physician, at *Padua*, imploring of him, that
 “ he would be pleas'd to cut the Stone out
 “ of his Kidney, being firmly fix'd in a Be-
 “ lief, that no other Method could relieve
 “ him; adding, that he was not insensible
 “ of the Danger, but that Death it self was
 “ in-

“ infinitely more Eligible than a Life in
“ that Misery under which he had long, and
“ did then Groan. *Merchetti* would have
“ very willingly declin’d the Proposal, re-
“ presenting not only the extreme Hazard,
“ but, as he fear’d, the Impracticableness of
“ the Operation, being, that it was, what
“ he never had attempted, and, that he
“ fear’d, to proceed in it, was, in effect, to
“ destroy him. But, Mr. *Hobson* persisting
“ in his Resolution, declar’d, that if he re-
“ fus’d, he would never desist till he had found
“ out one that would do it. *Merchetti* was, at
“ length, by his Importunity, prevail’d upon
“ to undertake it; and, having prepar’d him
“ ready for the Operation, began, by cut-
“ ting, gradually, upon the Region of the
“ Kidney affected, so long, till the Blood
“ disturb’d his further Progress, so that clo-
“ sing up the Wound, he suffer’d it to con-
“ tinue till the next Day, and, then, accom-
“ plish’d the Operation, by cutting into the
“ Body of the Kidney, and taking thence,
“ two or three small Stones; after which, he
“ dress’d it up again. *Marchetti* continued
“ to dress the Wound for a considerable
“ Time, but was not able to close it up, it
“ soon becoming Fistulous, from the conti-
“ nual flowing of the Urine, through the
“ Sinus; but, being in all other Respects, re-
“ stor’d to his former Health and Vigour;
“ and

“ and the Matter discharg’d, being little, he
 “ took leave of the Professor, and return’d
 “ to *Venice*, under the Care and Manage-
 “ ment of his Wife, who, one Morning,
 “ dressing the Sore, fancied she felt something
 “ hard and rugged, upon which, examining
 “ a little more carefully, with her Probe,
 “ she found it to be a Stone of the Figure
 “ and Magnitude of a Date-stone, which be-
 “ ing remov’d, he, never after, complain’d of
 “ the least Uneasiness in that Part. About
 “ Ten Years after this, he returned to *Lon-*
 “ *don*, where Dr. *Tyson*, and my self, were
 “ invited to see him, who did us the Favour
 “ of viewing the Sore. When we saw it,
 “ he applied nothing to the Orifice, but a
 “ clean Linnen Rag, which had a strong U-
 “ rinous Scent. He was then as able, in Ap-
 “ pearance, to perform all the Functions of
 “ Life, and to undergo any Fatigue, as any
 “ Man of his Years, being then, as I conceive,
 “ upwards of Fifty, and was the next Day
 “ to ride Post Forty or Fifty Miles.

THIS, I think, is the first Experiment of
 this Kind; at least, the first I ever heard of.
 And, tho’ we find it recorded by several Au-
 thors, as if it had been in Practice long be-
 fore; yet, scarce does any of them venture
 to commend it, as an Operation, that safely
 may be undertaken, unless a Tumor or Im-
 postumation

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postumation show the Way: so *Hippocrates* enumerating the Diseases of the Kidnies, and their Cure, thus expresseth himself. * De Intern. Aff.

Quum autem intumuerit & elevatus fuerit, subfect.

id Tempus, juxta Renem secato & extracto Pure,

Arenam per Urinam cientia, sanato, si enim Fu-

ge spes est, sic minus, morbus Homini commori-

tur. And from misunderstanding this Sen-

tence of *Hippocrates*, it is, that *Sinibaldus* in

particular exhorts the *French* and *Romon* Chi-

urgeons, to make the Experiment upon

Brutes, that they might with greater readi-

ness perform it upon Men. But with Sub-

mission to the Sentiments of that Gentleman,

he seems, by his general Exhortation, to in-

fer more from this Passage, than it can bear.

For according to the Directions of *Hippo-*

crates, we must never perform the Operati-

on, be the Symptoms of the Stone never so

obvious, never so grievous, unless an Apo-

stem manifest it self externally by a Tumor.

And then, indeed, the Necessity and Reason

of the Operation are so evident, and the

Difficulty, withal, so little, that no Man ought

to decline it. Nor do we want Instances of

Apostems happening to the Kidnies, arising

originally from a Stone there, and manifesting

themselves by a Tumor; upon opening of

which, Stones have been discharg'd with the

Pus, or have been soon after remov'd; and

this is the very Case, which *Hippocrates* sup-

poses

* Corn.
Celf. lib.
7. c. 26.

posés, and upon which he justly advises the Practice. But, 'tis my Opinion, that we have no manner of Evidence, that Nephrotomy was in Practice in his time, (but only with the aforesaid Limitations,) or in many Ages after. * For, *Celsus*, altho' he be very particular in his Discourse of cutting for the Stone in the Bladder, yet is he silent in this Matter. And *Galen*, who is copious enough upon Diseases of the Kidnies, especially the Stone, yet takes he no Notice of this way of Extraction. And, indeed, there are no Footsteps that I can discover among any of the *Greek* or *Latin* Physicians.

* Tract. 4.
c. 22.

SERAPION the *Arabian*, is the first, who I can discover to have writ upon this Operation, who delivers his Opinion of it thus. * *Quidam Antiquorum præceperunt Lapidem Renum extrahi, cum Ferro incidente retrò super Latus duorum Iliorum in Loco Renum. Ego autem video quod hæc Audacia est difficilis vehementer, & Administratio istius Curationis est maximè periculosa & suspecta de Morte.* Who these Ancients were, that advised it, I confess, is above my Conjecture to discover, unless we may suppose that he also misunderstood *Hippocrates*, as some of his Followers have manifestly done since. *Avicen* the *Arabian*, who flourish'd about the Thirteenth Century, had much the same Opinion of both

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both the Operation, and its Professors, with Serapion, his Predecessor. * *Sunt qui laborant* * P. 361. Edit. Ven. 1562.
extrahere ipsum per Incisionem, Ilii & per Dorsum,
sed est magnus Timor in eo, & Operatio ejus qui
Rationem non habet. The Sentiments of these two Authors differ only in this. That the one thought it the Undertaking of a Madman, and the other of a desperate Fellow. But from *Avicens* Words, there is some Light to believe that it was practis'd in his Days, tho' undoubtedly, if it were, from his speaking so contemptuously of it, we may conclude, it was only among Persons of mean Character, such perhaps as our Mountebanks, who having little Regard or Concern for Mens Lives, and little Reputation of their own to lose, venture boldly, and sometimes successfully, upon those Matters, which a more wary and judicious Man would tremble to undertake.

Among the Moderns, * *Franciscus Rosettus* * De partu Casareo, seems the first that seriously advis'd this Practice ; but, notwithstanding his Zeal to introduce this Operation into use, yet is he so ingenious, in support of *Hippocrates* Authority for cutting into the Kidney, as to acknowledge, *Presente tumore, nec aliter, Hippocratem imperasse Sectionem.* And as plausible as his Reasonings may seem to be, it does not appear, that he hath been able to gain

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many Profelites to his Opinion. The Sense of those Authors, that have mention'd it (who are not many neither) being generally against it, and concluding with *Riolanus* *,
 * Euch. Anat.Lib. 2. c. 28. *Nisi Natura monstrante viam atque praeunte, Nefas est tentare Nephrotomiam.* But, altho' it appears to be the concurrent Opinion of those Authors, who have treated of Wounds in the Kidnies, that if they penetrate the *Pelvis*, they terminate in Death; yet, by the successful Experiment above related, it plainly appears, that they were too magisterial, in exploding the Operation as impracticable.

The End of the First Part.



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GRAVEL and STONE.



PART. II.



SECT. I.

Introduction to the Cure.



IN the former Part, I have been prolix enough, in laying down the several Instructions necessary, for knowing the Nature of the Disease, the Parts affected, the Nature of the Fluids, the several Causes, the Symptoms attending, and the Prognosticks,
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which, now, brings me to this Part, which is the Curative, and is attended with many perplexing Difficulties, not common to other Distempers. And, indeed, I will be bold to say, that no Disease, afflicting the Body of Man, (whether acute, or Chronick, or both complicated together,) does require more Discretion, Care, and Judgment, to compleat a successful Cure, than this. I have observ'd it a Method, not uncommon among Physicians, treating of Diseases, to conceal some favourite Medicine, that, by its Vertues, had greatly merited, in the Cure of the Disease it was given against. The Advantage, I suppose, those Gentlemen propos'd, was, rather to acquaint the World, what brave Exploits they had done in Physick; how many desperate Cases they had cured; meaning thereby, more effectually to lure the Credulous to their Practice, than, by any useful Discoveries, to benefit Mankind.

I SHALL, in the Prosecution and Management of this whole Matter, act quite opposite to the ungenerous Principles of those selfish Men, consulting rather the Benefit of all Mankind, than, any ways, regarding my own single Advantage. And, following herein, the Example of our great Prince and Master *Hippocrates*, who, perceiving, by his great Abilities, that, the then present Disposition of
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the Season, did forebode a heavy Plague about to fall on some Parts of *Greece*; he, careful of his Country, commanded his Scholars to disperse themselves through the several Provinces, where he judged the infectious Myasma might most rage; and gave them proper Instructions, how to attack the fiery Disease, and remove the threatening Symptoms. Which signal Piece of Service, had such good Effects, that, in Reverence to his Memory, all *Greece* did consent to honour him as a God, erecting to him a most magnificent Statue, which they placed among their other *Pagan* Deities: As you may see more at large in *Pliny's Natural History*.

Vide Lib.
7. cap. 27.

SED Tempora mutantur; and, 'tis no Crime, now, to Quack it for Advantage, and turn Empirick for Profit, we have so many brave Men, and some, those of Character and Note too, to bear us out in this Practice, those that may be asham'd to impose their specifick Arcana's upon the credulous World, and vend them after such a Quacking Manner, for such extravagant Prices. This covetous Temper, in Physicians, is not only a downright Affront to the Profession, but a lessening of their Dignity, and deserves the Censure of that noble College, these unworthy Gentlemen have the Honour to be Members of. In vain do they stigmatize Quacks and Empiricks with opprobrious

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probrious Names, while themselves, by their Actions, are guilty of the same Facts they condemn in others. Not that I would have Gentlemen of the Faculty neglect that proper Means for the Support of a handsome Maintenance, neither would I debar the Honourable Professors, from those Advantages that ought to accrue in Practice. As in Divinity, so in Physick, the Labourer is worthy of his Hire: And that great Expence, and Charge, that is requir'd to qualify a Physician, makes it necessary, that an Allowance for his Advice be consider'd; and unless a Regard be had to a plentiful Way of Living, What Gentlemen would be so infatuated, as to educate their Children in a Profession that would not countervail their Costs and Labour? and, How unreasonable would it be, that they, of all Men, should be neglected and disregarded, whose only Business was to relieve the Miseries of Mankind? All I would insinuate by this Digression, is, to remind the Sons of Art, of the Dignity of their Profession, and the Honour of its Practice; and, how much it is fallen from that Glory and Honour it was formerly possess'd of, when Kings and Princes thought it no Lessening of their Regalia, to condescend to the Practice, as well as Study, of this noble Art. But, now, its Fences are broken down, and high Inroads made upon a Profession, that, for many Ages
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heretofore, was held inviolably sacred; and, every Scoundrel hath the Privilege to crowd his pretended infallible *Nostrums* into the Publick Prints, (not for the Safety of the People, tho' that be the Pretence, but his own private Advantage,) without Check or Controul. And there are not wanting some, with dignified Titles, who, both privately give Umbrage, and themselves publicly countenance, this Empirical Practicè, who are not ashamed to grace the Character of an ANTIVENEREAL SPECIFICK with the Credit of their own Names, and endeavour to gull People into a Belief of Impossibilities. But it will plainly appear, from the following Relations, that those grand Specificks, set off with Pompous Titles, does not answer to the Virtues, ascrib'd to them by their Author. Not long ago, a Gentleman came to me for Advice, who, engaging in the Wars of *Venus*, had the Misfortune to get a secret Injury, and whose Constitution either did not well agree with that invaluable Specifick Remedy; or, which is to the same Purpose, that celebrated Remedy did not reach those Encomiums, and Eulogies, daily publish'd in its Commendations: However, it did not cure him, after he had taken, at Times, of it, four Packets, which cost him four Guineas; An extravagant Price, you'll say, for a little Gum *Guaici*, *Scammony*, and *Mercurius Dulcis*, blended together with a little Syrup of *Roses*,

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or, what is much to the same Purpose, a little of some sweet Syrup. But, dear-bought Remedies prove always the most successful, and it is not worth a Rush, unless it comes to our Hands at an extravagant Price; and, our deprav'd Imaginations judge of the Excellency, and Value of any Thing, according to its Dearness. At my Request, this Gentleman writes to the celebrated Author of the Anti-venereal Specifick, (for I had a Mind to know the Issue,) and acquaints him, That his Buboe was more inflam'd, his Night-Pains worse, his Body more hot than before, his Limbs stiffer than formerly, besides all which, as an Addition to his other Calamities, he was now subject to a Hoarseness, and proposes Time and Place for a Meeting. To all which the Specifick Doctor answers, that he must Bleed ℥xii , and take Lenitive Electuary ℥i , and Cream of Tartar ℥\beta twice a Week, and apply to the Buboe a Plaister of *Emplastr. de Ran. cum Mercurio*, but refus'd to name any Time or Place for a Meeting; and, as I am credibly inform'd, never will do for any of his Patients. Now, I will leave the World to judge, whether they be not Villains, that support this Manner of Practice: The Patient is abandon'd in the midst of his Distress; and oblig'd to seek Shelter elsewhere. A Word or two of the Grand Elixir for the Gout.

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I AM acquainted with a Gentleman who was very desirous of experimenting this Remedy; and to be sure of its Efficacy, he sent to three of the Persons whose Names were affix'd to the publick Papers, as if, for them, it had done Wonders. Two of whom receiv'd no Relief, and the third, after he had taken nine Bottles, which, by the Way, cost Nine Guineas, thought his Fits were only something easier, not less frequent than before. Query, Whether the strength of Fancy might not contribute much towards that Benefit he thought he receiv'd; and whether a Medicine of less Value, and more safety, might not (by a Gentleman acquainted with the Distemper, and present to Judge of the Constitution and Symptoms then Oppressing the Patient,) be prescrib'd with greater Efficacy, and more Advantage; for, I might ask, how it is possible, for one Medicine, tho' never so excellent, to agree with all Constitutions. That this Grand Elixir, tho' never so well manag'd, should be capable of not only removing the several cruel, raking Symptoms of the Gout; but that the same Medicine, also, should be indued with a Specifick Vertue to cure the Disease it self, seems as Romantick, to my Apprehension, as that grand Absurdity of *Taliacotius's* artificial Nose.

For, as the learned Dr. *Harris*, ingeniously

Pharm.
Ant. Em-
CON-peric. 232.

confesses upon the Subject of the Gout. "That
" one and the same Intention serves not to
" remove the Symptoms, and cure the Dis-
" ease." And the Jesuits Bark, a most cer-
tain Specifick in all Agues, will prevent the
Return of the Fits, but yet is destructive, if
given in the Paroxism. And to what end
hath Heaven created such a Variety of Plants,
Roots, Herbs, Seeds, Flowers, Barks, &c.
destinated so many Parts of Animals for the
use of Man; if those base Medicasters can
furnish us with a Remedy, so extensive as
some of them boast of, and what is most la-
mentable, that this vile Cant should not only
take among mean, Plebeian Spirits, but that
my Lord, and my Lady, Sir *William*, Sir *Tho-*
mas, Right Worshipful, &c. should give Um-
brage and Countenance to such Delusions;
and suffer by the Insinuations of those despe-
rate Fellows, to the Shame and Disgrace of
Men of Honour and Credit in the Art. The
Gout is certainly a Distemper that requires
the utmost Care and Wariness, and, the
greatest Judgment well to manage its Fits,
and to remove the Symptoms, and as the
Constitution varies, so must there be, a Va-
riety of Applications also. Some Constitu-
tions require the most Spiritous Liquors to
keep it from the Brain and Stomach; and
Plenty of these shall be of great Service.
Others, I have known, to whom a Glass of

Wine would be present Death ; it would fret and inflame the whole Mass of Blood and Spirits, and put all Nature into a Ferment. Besides, a Consideration is always to be had to the Age of Patients ; which this celebrated Author has made no Provision for ; but blindly pushes on this Specifick Elixir, as a general Remedy, or, rather, as a general Destruction to Mortals. But the Tragedy is still to follow. A Lady of my Acquaintance, having heard great Commendations in the Publick Prints, of those famous Sugar Plumbs for the Worms, sold at the Anodine Necklace, and compos'd by the same Author, had an itching Inclination to take some of them, she took but three (and, by the Way, she had Directions to take five) and in less than half an Hour, she was seiz'd with a terrible Trembling and Faintness, to which succeeded a Dizziness and Consternation of her Spirits ; immediately after she swooned. Her Eyes were convuls'd, and the Whites turn'd up ; her Mouth distorted, and drawn aside, her Hands and Feet, her Head and all the Extremities of her Body were seiz'd with cold Sweats ; to which succeeded a Stiffness, as if Dead ! O God ! That such dreadful Symptoms should arise from the taking a few innocent Sugar Plumbs, and in a less Quantity than usual, given to those of her Age. At length she vomited, before the
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Mercurial Poison had put an entire Stop to the Springs of Nature; and, after much Languishing, she recover'd; but, for near a Quarter of a Year, her Mouth and Jaws were so sore, her Teeth so black and loose, that she was not able to take any Thing but Liquids for her Nourishment. And, so I leave my Gentleman's Medicines; and, those to make the next Experiment, that have a Mind, either to hazard their Lives, or ruin their Constitutions.

I HAVE observ'd, during the time of my Practice, that the same Remedies applied to the same Case, and, as far as I could conjecture, to Persons little differing in Constitution, yet have not always produc'd the same Effects. Nay, the same Medicine that relieved a Person at one time, shall fail of Success, sometimes, at another. And, so long, as the Symptoms of Diseases shall vary, and Constitutions differ, so long we will be under a Necessity of using Variety of Applications.

BUT, to leave this Digression, and turn the Thread of my Discourse more to our present Purpose. There is not any Disease among Mortals, in which, I believe, more Specificks have been pretended, than in this of the Stone, and, if ever a Specifick Medicine be
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necessary in any Disease, most certainly in this; and, we can never too much regret the Want of a certain, safe, specifick Remedy, that might give Relief and Ease, to the Patient lying under the racking Torture of its Symptoms: But, then if we seriously consider the Nature of the Malady, the Hardness of the Stone, Tenderness of the Parts, Weakness of the Patient, it may be, sadly broken and worn out by Reason of the Violence of Nephritick Paroxifms; and then again, if we be further attentive to the Bustle and Disorder, that must necessarily arise from such a Medicine, tumultuating with the Stone, in order to the breaking of its Texture, we shall have Reason to conclude, that, such a Remedy, will not be, but with great Difficulty, if ever, attainable, in this Disease. For, First, It must be indued with such a Power and Force, as to be able to suffer all the Digestions to press upon it; and still retain its pristine Qualities; and convey them unalter'd into the Blood. Secondly, It must pass and repass with the circulating Fluids, thoro' the various Meanders they make round the Body. And, Lastly, Being in Part conveyed to the Kidnies, it must retain a Force sufficient to break a solid Stone, and Dissolve, or Crumble it into small Sands (either in the Kidnies or Bladder) to be excern'd with the Urine; and this Operation, it must not only do, once or twice,
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and so away, (for such Acts may intitle it to a good Medicine, and give it some considerable Esteem in this Disease,) but, it must have this dissolving Influence upon the most hard, solid, and well-compacted Stones; and, also in different Constitutions. But, as it hath pleas'd Providence, never yet to discover such a Blessing to Mortals, (for I do believe such a Remedy to exist in the Nature of Things,) so we shall remain under a Necessity of forming such Rules in Cure, as will be most agreeable to the Constitution of the Patient, and Symptoms then pressing him. Being in Company with a Gentleman, lately come from his Travels, and discoursing upon the Nature of this Disease, he gave me to understand, That, in his Travels, he had found a most certain, safe, and infallible Remedy, that would give most sure Relief, and intirely cure this Distemper under all its Ailments. Against the Matter of this Remedy he so much boasted of, I objected the Difficulty of its Operation, and the Danger that would attend such a Bustle and Commotion, as would be necessary for breaking the Texture of some hard Stones. In Answer to which, he told me, That this Arcanum, of his, did not act by Virtue of its clashing Principles, or any fermenting Acid lodg'd in its Substance; neither did that Disorder I suppos'd, arise in its Operation; but it did perform

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form all its Specifick Virtue, by gently penetrating, and intimately insinuating its Diuretick Subtilty, consisting of an active Nitrous Salt, into the minute Pores of the Stone; which all along destroying the viscid Lympha, that cemented together the Infinity of Arenulous Atoms, the same becomes a *Saburra* of sandy, gravelly Matter, and so passes off by Urine. We harp'd a long Time upon the Words, *Insinuating its Diuretick Subtilty, consisting of an active Nitrous Salt.* I urg'd him more plainly to explain the Principles of his Secret; but he refus'd, and assur'd me, that it was a Compound Medicine, and that *Sal Nitri* did not come into the Composition. In short, the Reasons he offer'd seem'd strong and convincing; and he offer'd me the Secret for four hundred Guineas. I told him, I would carry him to four Gentlemen, every one of whom, I was certain, had a Stone in the Bladder, and he should prepare his Remedy, to the best Advantage, and if it did but succeed in the Cure of three, by a Dissolution of the Stone, I assur'd him, I would give him 1000 Pounds for his Secret; but, in Case Success did not answer, he should be content to lose his Trouble and Pains, without any Gratitude. I offer'd to Article with him upon this Point; but, my Gentleman would not come to any Terms of Agreement; which made me suppose, that his Remedy was much
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of the same Nature, with those other pretended Specificks sold up and down this City, set off with great Commendations, but when try'd, their Performances are not answerable. Indeed, so resolute was he, in Defence of his Specifick, so bold and positive in the Certainty of its Operation, in Point of Cure, that had but the Half of what he advanc'd, in Defence of its Efficacy, been certain, we might, with Reason, have believ'd, That an Angel from Heaven had been employ'd in dispensing the Medicine, and that the unerring Word had given it Power. But, I will plainly prove, in the Sequel of this Discourse, that there never was such a Specifick, as was not liable to great and many Inconveniencies: And, granting the most that any Empirick can desire, That a universal Specifick should be born, and come from the Womb of our Common Mother, that could cure this Disease, and remove all its excruciating Symptoms; and that all other Distempers should enjoy the same Privilege, of a safe Specifick appropriated to them likewise; yet, this so extraordinary Advantage gain'd, would not introduce an Empirical Practice, but still there would remain a Necessity for the Advice and Counsel of the Learned. To support this Assertion, we may observe, in the most certain Specifick yet known among us, which is the *Jesuits-Bark*, That it does not (I do
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not say it cannot) cure all Agues and intermitting Fevers; and Experience daily assures us, that several Accidents may happen, to render its Effects not only useless, but sometimes dangerous, even in those Distempers; it is by all allowed to have the greatest Influence in removing. That, when it is disorderly given, without any Regard to the present Symptoms, before proper Evacuations, not manag'd with that Care and Discretion, necessary in such Cases, not well Tim'd, as to the Fits, and very often (what is of great Consequence) not being join'd with proper assisting Remedies; for Want of which Management, many Times, it shall be so far from Curing Agues and intermitting Fevers, (most excellent in which Cases when skilfully administer'd,) that its Use, continued for any Time, shall greatly disorder their Fits, and strike the Distemper upon the Nerves, mimicking other Diseases more dangerous and fatal to the Constitution of the Patient, than those it was given to remove and prevent. I have often wonder'd at hearing the dismal Complaints of many People against this innocent and inoffensive Remedy; when, for my own Part, I can boldly say, I never yet gave it unhappily, but always with the greatest Success and Advantage to the Patient. This most noble, safe, and excellent Specifick, among the infinite Numbers of reputed ones,

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truly deserving of so great a Title, having been administer'd to so many People, with certain Success, so many Times repeated, without any Detriment to the Patient, and lastly, having obtain'd so general a Repute and Vogue, in the learned World, begins, now, to be under a most sensible Decline. Unhappy Fate of the best of Medicines! to give Way to those that shall succeed, according to the Humor and Caprice of a giddy World. Its Virtues now are drawn upon the Stage, and People begin to question, whether it truly cures the Disease, or only shifts the Scene, in order to appear afterwards with greater Misery to the Patient. Many think it flings the Distemper upon the Bones, and others will tell you, it excites Rheumatisms in the Limbs, and other Parts, and crowds the Body with Obstructions. But, these Inconveniencies, and dangerous Effects, it is charg'd with, never happen, but when People have the Misfortune to fall under bad Hands. All is not Gold that glisters, and a gilt Chariot, and Pompous Retinue, are not the only Qualifications that indicate an able Physician. A bold, and daring Ignorance, may be crowded under the Lustre of these Appearances, and gain, in the World, an Esteem they never deserv'd; while Men of Honour, and a more exalted Genius, shall pass unregarded, for Want of this Boldness to display them-

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themselves. I know a Gentleman of the Faculty, that bears the greatest Sway of any Physician in the City, that gave no small Blow to the Reputation of the *Jesuits-Bark*. He being sent for, to visit a certain Merchant, not far from *Thame-street*, then labouring under a dangerous Pleuritick Fever, and perceiving a Remission, (not an Intermision,) immediately prescrib'd the *Bark*, in Bolus's, to be taken every Four Hours. Cursed Practice! The Patient had not taken Four, before his Breath grew short, his Fever was heighten'd, Pain increas'd, his Cough lock'd up, a weak Pulse, and all the other Symptoms indicated Death near at Hand. O Gods! That such a mortal Error should be committed by his Eminency, so highly repugnant to Reason, and the Laws of Practice. But, this unfortunate Gentleman had a better Fate, than to fall a Sacrifice to his Ignorance, nor, continued he, long, under this calamitous Disaster; for, having good Friends, and a plentiful Estate, he immediately sent for the Honourable Dr. *Ratcliff*, then alive; who coming, and finding what was done, charg'd this eminent Doctor with downright Murder; telling him, that such a Blunder was unpardonable, in an old Nurse, bid him hold his Peace, orders the Patient to Bleed immediately, then a Pectoral Apozem, Balsamick Linctus, and some Diuretick Powders, and, lastly, Blisters; by

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which

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which Means, he remov'd the threatning Symptoms, cured the Patient; and this Gentleman, or, that you may know him the better, (for I do not care to name Names) the Bulky Doctor, had the Honour to be discarded.

To conclude this Section, as I am acquainted with no peculiar Specifick, so I have taken Care not to obtrude any infallible Nostrum, of my own, upon the World: But, if there be, in Nature, a Universal Dissolvent, that can specifically cure this Disease, and remove all that Variety of Symptoms, that cruelly vex the afflicted; let us all, with one Accord, invoke the Supreme Author of Nature, that he, who governs the World, and disposes of all Mortal Events, would be pleas'd to direct the Genius of some Favourite Son, to the finding out this inestimable Secret.



S E C T.



S E C T. II.

A Regulation of the Non-Naturals.

IN Point of Cure, the Physician's Care ought, first, and chiefly, to be employ'd about a right Management of the Non-naturals; which, co-operating with proper Medicines, may conduce to a very good End: And, I come now to consider them under another Face of Things, than when I view'd them before; for then the great Debate was, how much their disorderly Use, contributed Assistance to the being of the Stone in the Body. Now, how far their right Regulation may contribute, towards a Releasement from that Thralldom; and, as their Abuse does daily bring on great Damages, to the Constitution, and are the Occasion of many Diseases; so, when rightly dispos'd, and regulated, they are, commonly, of great Advantage, and, very often, of themselves, contribute no small Share, in helping forwards a successful Cure. And, I think, their Influence is not more conspicuous, in any Disease, than this of the Stone and Gravel.

As to the Air, that which is moderate, is, of all others to be prefer'd, but the Variety, and Change, of this Element, in the Revolution of Time, will not suffer the Body, always, to enjoy one and the same Tranquillity. Extreames of Heat, and Cold, will succeed one another, as well as Day and Night, and vex the Patient with their different Effects. In all unseasonable Weather, the Patient ought well to regard his own Constitution, and fix his Residence near some great Town, remarkable for a fine, clear, Balsamick Air. Let the Place of his Habitation, if possible, be free from great Woods, and high Mountains, in a plain Champion Country, not fenny, or abounding with standing Springs, or great Lakes, which are apt to raise Mists, or gross Vapours, that may intercept the Balsamickness of this pure Element. In extreme Heats, it will be necessary, that the Party continue, as much as possible, under some shady Covering; and, let him take the Advantage of the Mornings and Evenings, for a Walk or Ride, if either be thought adviseable. In Noblemens Houses, they are very well provided, against the Extremes of Heat and Cold, by their Cooling-Rooms and Baths, very frequent in Families of Distinction. Extreme Frigidity, tho' excellently well agreeing with the Constitutions
of

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of robust, strong Bodies, yet to weakly, thin People, and those of a delicate Make, nothing brings greater Detriment to the Bodies of such: And this is most evident in snowy Seasons; when the Fluidity in the Air is converted into a positive Nitre, and, by the cold Blast, is shiver'd into Flakes of different Sizes, which falls round the Neighbouring Parts. Persons of nice Constitution, of thin, and tender Habit of Body, shall find great Inconveniencies from such Inclemencies of the Weather: And, I know no Way to remedy this extreme Coldness of the Air, at such Times, but by keeping good Fires, in the Winter, and living much in the House, especially Old People.

IN the Choice of Diet, great Regard ought to be had to the Constitution, and Custom of Bodies. Some, you may as well deprive them of Life, as prescribe Rules, or Regimen, to 'em; their gluttonous Appetites plead Custom, against Prescript. And, many, in this luxurious Age, have clos'd the Lamp of Life, by irregular Living, before the natural Course of the Oil was spent. Let a Physician plead, never so much, the Dangerfulness of the Diet, and the fatal Consequences, it will, in Time, bring upon the Constitution, yet, they will salve all with this Motto, It is what they love, and they will sooner dye, than forego

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it: Glorious Martyrs to the Belly! These, by their own Rashness, and Strength of their inordinate Passions, in one Sense, may be truly said, to dig their Graves with their Teeth. In Flesh, I would admit a plentiful Diet of Mutton, Lamb in its Season, Veal, Conies, Chickens, as also Pork, and young Pig. The Turkey is not only an agreeable, but also, a nourishing Flesh. Goose-Flesh, Pidgeons, and all Wild Fowl, except Larks, and Birds of lesser Size, I would have refrain'd; and, of these, he may eat, without Disturbance. The Feet of most Quadrupedes, especially great Heifers, make the best Jellies, and, are much better, and more nourishing, in this Disease, than the Jellies made of the Raspings, or Shavings, of Harts-Horn: Besides, they may be so order'd, as to afford a very savoury, nourishing Diet, proper for those that labour under a Consumption of the Bladder. And, I am acquainted with a Gentleman, who, for some Time, Dieting himself upon them, and Milk alone, several ways dress'd, experienc'd great Benefit in an Ulcer of the Bladder.

MILK and all that comes of Milk, except Cheese and Curds, affords excellent Nourishment; and, sometimes, I am inclinable to think, the Cows Milk, warm from the Dugs, better than Asses Milk, unless the Patient be much impair'd, by the Severity of the Fits of
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the Stone. For, in all weak Constitutions, in aged People, and emaciated Bodies, the Asses Milk is certainly preferable, as being more thin, light, and easier of Digestion; not containing so many Oily, Buttery, Particles, to obstruct its Entrance into the Lacteal Vessels, as the former. But, in all strong and healthful Constitutions, when the Digestions of the Stomach are not broken, I believe, the Cows Milk much preferable; and, Custards, White-Pots, Syllabubs, and all the Niceties that can be prepar'd from Milk, may be eaten, with Advantage, in Affections of the Kidnies and Bladder.

WHEY is a Liquor, both nourishing and cleansing, and is very cooling to the Body; and, may be of great Service, to those that are subject to Inflammations of the former Bowels.

UPON the Virtues of Honey, I could enlarge for ever: It is a Sovereign Remedy, and affords both Food and Medicine; but it will not agree with all Constitutions. To some, it gives the Stomach Ach, to others Gripings of the Bowels, and to many a Looseness; which made the Honourable Dr. *Ratcliff*, in the *Confect. Fracastor. s. Melle*, substitute *Syrup. de Meconio*, in its Stead. Now, whether it is alter'd in its Properties, from what it was formerly, or whether

whether the Constitutions of this luxurious Age, abounding more with Acids, from high feeding, and the too much drinking of spiritous Liquors, may make it apt to ferment, is more than I can determine, but certainly it is a most wholesome Food, and in this Disease may be us'd with great Advantage.

OF Fish, the Whiting and the Flounder, as also the Young Fry; Mackerel in Season may be eaten sparingly. Carp and Tench I must permit, because most Gentlemen have their Ponds stocked with them; and now and then, the Salmon, but this last, I only give by Permission, for it is a strong, tho' a princely Fish.

AMONG Wines, the roughest is least to be us'd, unless the Constitution, by a long Custom, have made them familiar. As I never drank Wine in my Life, my self, so I hope the Reader will excuse me, if I am not so particular in explaining the Influence it hath upon Bodies. The only Fluid that have digested my Aliment, from my Infancy, hath been Fountain or Spring Water; and, I can bless a superior Cause, my Habit of Body is not less healthful and vigorous, than those that have employ'd a stronger Menstrum. White Lisbon, is, by most, accounted a good safe Wine, and is gently Diuretick, it comes
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most into Medicine, and of all others is best for a weak Stomach. I know a Gentleman, who, not long ago, was quite reliev'd from an involuntary Issue of his Urine, by plentifully drinking of Sherry. Some mightily extol Champaign; but, that is only for those that have golden Pockets, if they design to drink freely, and continue its Use for any Time. I remember, while I was in that Country, I heard but few Complaints of either Gravel or Stone; but, then the Rheumatism was as Endemical there, as the Scurvy is here in *England*. All I shall say more, is, that Wines saturated with plenty of Spirits, best agree with *English* Bodies. Poor Wines thin the Constitution by preying upon the Spirits, and make the Body look Meagre. I remember, I observ'd at *Paris*, the generality of the Common People, with very mean hal- low, thin Looks; while, the Gentry, for the most part, appear'd with jolly Countenances. And, the Reason given me, for this Diversity of Complexions, was, that the one drank poor weak Wines, and the other, those in- rich'd with a more plentiful Spirit.

I SHALL close this Observation upon Diet, with a concluding Passage from Dr. *Cheyne*;

“ As it is only the Rich, the Lazy, the Vo-
“ luptuous, who most suffer by the Gout, so
“ those only who have spent their Life-time

Vid. Es-
say upon
the Gout,
Pag. 97.

“ under

“ under its Tortures, can best tell what
“ astonishing Miseries Wealth and Vice bring
“ upon Mankind ! When the Gouty Humor
“ has seiz’d upon the noble Principles of Life,
“ when it has broken, subdued, and ob-
“ structed all the fine Pipes, and slender Pas-
“ sages, in whose Openness and Soundness
“ all the exquisite Sensations, all the delicate
“ Usages of the Animal Faculties consist.
“ When nothing but Pain and Melancholly,
“ frightful Ideas, horrible Dreams, and black
“ Despair remain. Who would not have
“ parted with the richest Delicacies, the
“ most delicious Wines, and the most enti-
“ cing Vices, for a plain, simple Diet, an
“ useful laborious Life, Freedom from Pain,
“ and a good Conscience. To conclude, Tem-
“ perance only, Divine, Innocent, Indolent,
“ and Joyous Temperance can Cure, or effe-
“ ctually Relieve, as the Gout, so the Stone
“ and Gravel.

ACTION and Rest to the Body, are the same as Sleep and Waking. As to Motion, while its doubtful, whether it be the Stone, or only Gravel, this will be a Means to discover the Truth : For, let any Person that is troubled with what he supposes the Stone, ride ten Miles upon a hard Trot, or Hand-Gallop ; if it be the Stone in the Kidnies, he shall perceive a very numbing Pain to seize him,

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him, which ascending shall affect the Stomach with a Vomiting. Now, tho' the same inconveniency happens, also, in the Gravel, yet, seldom does the Disorder last, so long, as when the Stone is in Fault ; besides, Vomiting is not so usual, but in the Stone, Vomiting is not only inseperable, but the Symptoms, very often, continue two or three Days, and sometimes longer, before the hurry is appeas'd : Add, That in the Stone, after Riding, a crude, limpid, clear, watry Urine is commonly excern'd without any Sediment, unless any Parts be lacerated by the Excessiveness of the Motion, and then the Urine becomes Bloody. But, in Cases of the Gravel only, a thick gross Sediment always accompanies the Urine after Riding. If the Defect be in the Bladder, the Symptoms are all more grievous, with a certain Weight upon the *Pirenaum*, and very often the much making of Bloody Urine ; and the Stone, many Times, grating against the nervous Coat of the Bladder, may excite a Strangury, by convulsing the Sphincter Muscle. But, if Gravel, only, be in the Bladder, the Urine is thick, turbid and sandy, as in the Kidnies. In Cases of the Gravel only, much Riding is certainly of great Service, and its the best Exercise in the Management of a good Medicine, for it does greatly promote and help forward its Operation. Of all things, let me
advise

advise every Person, who, either is troubled, or do find in his Disposition a Tendency favouring either Stone or Gravel, to avoid Bowling as a most pernicious Exercise: for, the bending of the Body, and the Strefs that is put upon those Parts, upon the Cast of the Bowl, does greatly damage those subject to this Disease; and all stooping Exercise does not only retard the Cure, but greatly promote the Generation of Gravel. For, the Nerves, Veins, and Arteries, of those Parts, being somewhat relaxed, in a stooping Posture, retards the Secretion of the Urine in the Kidnies, and gives Advantage for the Urinous Recrements to settle in the *Pelvis*; and, tho' it may be objected, that a sitting Posture hath the same Inconvenience; yet, I may Answer, that in a sitting Posture there is neither that stooping, nor that Force put upon the Parts, as in Bowling.

To this of Exercise, I must subjoyn the Use of cold Bathing; Dr. *Fuller* ranks it amongst his *Gymnasticks*, and lays great Strefs upon it in the Cure of many Diseases, but, especially, the *Hypocondria*. Sir *John Floyer*, has writ a whole Treatise upon the Advantage of cold Immersion; and, Dr. *Baynard* seconds him upon the same Subject. Both prove it highly serviceable to the Body, labouring under various Diseases. Indeed, I must say, I
have

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have my self, experienc'd great Benefit from it, in an Indisposition, occasion'd by the loss of Friends; I had little hopes of ever recovering. Mr. *Wainwright*, in his Mechanical Account of the Non-naturals, tells us, That nothing more certainly gives ease, and effectually promotes the passing of Stones in a Nephritick Fit, than warm Bathing. And, Cold Bathing, to my certain Knowledge, is not less efficacious in preventing the return of the Fits, if it be frequently follow'd. The Cold Bath acts upon the Solids by bracing or contracting all the Fibers of the Body, and the more suddenly it is apply'd, the more violent is its Operation. It, also, hath its peculiar Influence upon the Fluids, by fusing and dissolving the viscid Humors, and causing a plentiful Secretion of all the Juices; so that, whoever is desirous of experimenting the Usefulness of the Cold Bath, in Cases of the Gravel, it will be best in the Morning to plunge over Head, and to continue no longer in the Water, than he can well bear to hold his Breath under it, for it is the first Shock that gives the greatest Contraction to all the Muscular Parts, whereby the Vessels are restored to their due Tensity, and Firmness; and all Gravel, from the Kidnies, Pelvis and Bladder, with the Urine, is evacuated. So that while we are certain it is only Gravel, the Cold Bath is of singular Service.

But

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But, after it is arriv'd to a confirm'd Stone, and larger than can pass the Urinary Passages, I believe, the use of this Exercise will be better let alone, for it can only raise a great Disturbance, without being able to produce any good Effects.

I WOULD advise no Gentleman, or Person, labouring under this Malady, to sleep above six Hours, or seven, at the farthest, and let him take this Caveat also, that what Sleep is got before two or three in the Morning, is much more nourishing than any he shall take after, and however the Slumbers may be more pleasing after, yet they are not attended with that Advantage to the Body, which is the only thing I am here concern'd for. To go to bed by Ten, and rise by Four in the Summer, or at the same Hour, and rise by six in the Winter, is not only the most healthful to the Body, but also, when Custom hath made it habitual, the most pleasing to the Mind. But, these Instructions I give with a Salvo to Persons in Years, and those of a weak, infirm Constitution.

LASTLY, Be careful of the Lodging; let the Bed of the Indisposed be hard, and rather Quilts than Feathers: A smooth hard Bed strengthens the Parts; whereas, being sunk every Night in Feathers, melts and dissolves
the

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the Firmness of the Body, and in particular heats, and inflames the tender Membranes of the Kidnies.

OF the Non-naturals, the Passions of the Mind, claim our last Consideration : Let the Patient, as much as possible (while under Cure) be compos'd to Mirth, and innocent Recreations, for Chearfulness of Spirit is the grand Symptom of a healthful Body. If, in Company, I behold a Man always chearful, I can without an Oracle conclude him Healthful. Avoid Anger, vehement Passion, and the other Perturbations of the Soul, which, as a Deluge overwhelm the Spirits, and occasion great Disorders in the Animal Oeconomy. Dulness of the Mind, Melancholly, too much Thoughtfulness, long Watchings, and much Study are all to be laid aside, when any Symptoms appear that indicate either Stone or Gravel; for these feral Passions, as they may be a Cause, so certainly, they may greatly hinder the Cure, and obstruct the Operation of the best Medicines, so far, that they shall not be able to confess their Vertues.

Joy, in which Expression I comprehend all the other Exhilarating Passions, when moderate, may most properly be call'd a Diuretick Medicine; and, indeed, a Remedy of

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no mean Efficacy. For this vivifying Passion, induces such a Pleasingness to all the Spirits, causes so agreeable a Harmony in all the Humors; that so long as it continues, so long the Tranquility of the Spirits, and Welfare of the Body, are admirably well provided for. This pleasing Pleasingness, by contracting the Fibres of the Solids, gives a gentle, tho' swifter than ordinary Motion to all the Fluids, augments the Secretion of the Animal Motion, whereby, not only, the Animal Spirits are more amply supplied to the Brain, for the Vivacity, and Sprightliness of the several Functions: But in the lower Region, the increased Motion makes the Secretion of the several Humors to be perform'd in less Time, and in greater Plenty than usual; so that, under this agreeable Passion, we have not only a plentiful Secretion of the Bile, Pancreatick Juice, Saliva, &c. but, in particular, a plentiful Discharge of Urine; and with much Reason, appears the Verity of that Proverb. Laughing causes *Fatness*: For Laughter giving an active Motion to the whole Body, opens the secretory Glands of the several Parts, which receiving the several Fluids to be secreted, enriches the Blood, and consequently, it being insinuated as Nourishment to the Constitution, must give, not only a greater Firmness and Solidness to the several Muscular Parts, to which it is sent, but also, afford

afford a greater Bulk to the whole Body. But if these Reasons be not strong enough to convince the Understanding of the Advantage of a chearful Disposition; let him but observe, on the contrary, how Thoughtfulness and Pensiveness, not only, emaciates the Body, and makes a ghastly Look all over the Constitution; but how these cruel Passions even prey upon the Soul; and Experience will convince him, that what I have said hath much of Truth in it. Not, that I would press upon any lying under the Torture of this Malady, a compos'd Spirit. I know, I may as well bid him die, as bid him be chearful, when rack'd under the cruel Symptoms of this Disease; all my Aims are, to exhort him to bear up to Chearfulness, when Intermissions shall give him Respite from his Dolors; for, certain it is, no Man is so miserable, as always to be in Misery, if his Case be so desperate, then, e'er long, he must, of Necessity, bid adieu to this World. For grievous acute Pains, and continual, cannot long be supported, but by daily loss of Strength, and breaking of the Constitution; which, sooner or later, will, infallibly, put an end to his Life and Distemper together.





S E C T. III.

*Of Specifick Medicines, in the Cure of
Gravel and Stone.*

TH O' I have many Times reliev'd the the Stone and Gravel, and forc'd them away in great Loads of Sand, with the Urine; yet these Effects were always produc'd, by a Method agreeable to the Rules of Practice, and, differing, in Circumstances, according to the different Symptoms then pressing the Patient; I deny, that I am acquainted with any one Medicine, which, upon frequent Trial, I could ever think deserv'd the Name, or Title, of a Specifick, in these Affections: Though some I prescrib'd, have given great Demonstration of their Virtues, and reliev'd the Patient, when least of all was to be expected, from the distracting Symptoms that, then, oppress'd him. However, resolving to prosecute this Subject, by a Method agreeable to the Laws of Practice, and the Variety of its Symptoms, I shall, here, for the Information of the Reader, exhibit a Compendium of such Medicines, as both Experience, and Success, have warranted my Practice of; and
such

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such also, as the most ingenious Men have induc'd me to believe, have a noble Power in breaking, resolving, or dissolving, if possible to be done, this tormenting Malady, the Stone.

IN this whole Process, I have avoided, as much as possible, the multiplying many Simples in one Prescript, the Custom of too many Authors, in their Writings. For, I consider, with the Learned Mr. Boyle, " That
" the Jumbling together of many Ingredi-
" ents, only serve to confound the Operation
" of each other, and render the Composition
" less agreeable to the Constitution of the
" Patient. For, all of us know, continues
" that great Man, That the purest Wheat
" does make the finest Bread, and much bet-
" ter for the Nourishment of the Body, and
" Constitutions of weak People, than when
" several Sorts of baser Grain, are blended
" together with it; as, Wheat, Barley, Oats,
" Rye, &c. ana Partes Æquales. So, I think,
a choice Simple, dos'd to a triple, or, it may be, to a quadruple Quantity, must produce more notable Effects, than when a Farrago of Simples are compounded together. For, if this Simple I design to give the Patient, be the best, and most proper, in the Disease; sure, its Operation must be greatly impair'd by admitting many others to be join'd with it; because, they will considerably lessen that

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Largeness of Quantity, which might be taken of it alone for a Dose, which cannot so well, when it is mix'd with other Ingredients.

IN the Choice of Medicines, we must distinguish between those that remove the Symptoms, those that evacuate little Stones and Gravel from the Kidnies, or Bladder, and those that break, or dissolve, it in either Part. The first Sort, are those that come under the Denomination of *Anodines*, and *Balsamicks*; and, in grievous Tortures, we are, many Times, oblig'd to call in the Assistance of *Narcoticks*. The second Class of Medicines, are those we, generally, call *Diureticks*, or, as Dr. *Gideon Harvey* styles them, *Piss-drivers*. The third, are term'd *Lytbontripticks*, or Stone-breakers, whose Power and Force are chiefly employ'd in disuniting, or diminishing, the Texture of Stones, larger than what can pass the Urinary Passages.

Of Anodines.

THEIR Manner of Acting in this Disease, is, by curbing the Disorders of the Spirits, and stilling their Orgasm, whereby the Stone, or Gravel, infesting those Parts, lie at Rest, for a while: For, we are to consider, that the Stone ever moves, during the Nephritick Paroxysm; which Motion is greater or lesser, according to the greater or lesser Violence of
the

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the Fit. Now, this Motion of the Stone, may, first, arise from something eat, or drank, that is disagreeable, from taking Cold, or over-violent Action; but, most commonly, it arises from the Endeavours of Nature to dislodge the Enemy, where, in the Conflict, it grates against the Nervous Tunicks, and excites Convulsions in those Parts: All which Disorders, are admirably appeas'd, by a liberal Dose of a well adapted Opiat; of which Sort, are all those Medicines, that have Opium for their Basis. The Principle of which are the *Pill. Mathei*, or *Starkii*: The *Laudanums*, of all Kinds, as well Solid, as Liquid. All which are highly necessary in Distractions of Pain.

NEXT to Medicines of Opium, I shall take ^{Sem. Hy-}
Notice of the Sem. Hyosciami. ^{osc.} It is a most Sovereign Remedy, in all Affections of the Kidnies and Bladder. It wonderfully helps Stranguries; and, is endued with a peculiar Faculty, of restoring the lost Tone of the Sphincter Muscle of the Bladder, and, thereby relieving an involuntary Issue of Urine. I absolutely cured a Gentleman, who had not been able to retain his Urine, for three Years, with this Seed, join'd to two, or three, more Ingredients.

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Papaver.
Er.

THEY cool much, and are gently Anodine, and help in slight Inflammations of the Kidnies or Bladder.

Sem. Papav. Alb.

THEY, with Sweet Almonds, make a pretty pleasant Emulsion, which greatly eases in the aforesaid Cases.

Camphor.
Id.

OF all Anodine Medicines, yet found out, the most Sovereign, in removing the Paroxysms of both Stone and Gravel; I have known Ten Grains of Camphire, join'd with Six or Eight of *Ens Veneris*, assuage the most desperate Fits, where all Opiats have been given in vain; besides, it cools all Inflammations, and removes the extreme Heats, that usually vex those Parts, in the Fit. Therefore, I am surpriz'd, to find Dr. *Woodward* so egregiously mistaken, concerning the Virtues of Camphire, as to condemn its Use, as hurtful, in the Small-Pox: When, granting that Disease to arise from a Redundancy of the Biliose Salts, as that Gentleman supposes; yet, in the World is there not a Medicine, that more potently resists the Acrimony of the Humors, and will sooner remove bloody Urine, than this; for, by its Oleose Volatile Particles, it penetrates the minutest Foramina of the Vessels, and disposes all those Biliose Acrimonious Salts, to be plentifully discharged thro'

Vid. his Theory of Physick and Diseases pag. 73, 118.

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thro' the fine Strainers of the Skin, whereby those Parts formerly oppress'd with the Violence of those Salts, are greatly reliev'd.

Of Balsamicks.

BALSAMICKS are those Medicines, that relieve the Parts, by relaxing or softening their Fibres, and by blunting the Acrimonious Salts of the Humors; whereby they are capable of greater Distention. They are necessary to soften and prepare the Parts, for the facilitating the Passage of little Stones, from the Kidnies to the Bladder. Of this kind, are all Oleose Preparations, as the *Ol. Amigd. Dulc. Lin. &c.* As also those Roots and Herbs, that abound with a smooth mucilaginous Substance, such are the *Rad. Alth. Herba ejusdem, Fol. Malva Mercurial. Flor. Lamii Lill. Alb. cum Rad. Sem. Lin. Hord. Gallic. Amygd. Dulc. Sem. 4r. frigid. Major. & Minor. Sem. Cydonior. Flor. Violar. Sperm. Cati Rad. Flor. & Herb. Sambuc. Rad. Glycer. Gum Arabic. Tracaganth.*

Of Diureticks.

THESE only, are intended in this Place, that by their inciding and attenuating Quality, thin the Blood, and quicken its Circulation, whereby the Secretion is increas'd in
the

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the Kidnies, and little Stones and Gravel wash'd from those Parts, into the Bladder, to pass off by Urine.

The Five opening Roots.

RADIC. *Alth. Petrosil. Fanicul. Gram. Asparag.* Of Parsley, Fennel, Grass, and Asparagus. These are all endued with a most noble Diuretic Force, and are powerful Movers of Urine, they obtain above most other Diureticks, this Priviledge, that they contain a Slimy mucilage, with which they lubricate the Urinary Passages, for the forwarding any little Stones or Gravel. They also blunt the Salts of the Urine, and preserve the Kidnies from Inflammations, or Excoriations, by besmearing them with their Viscosity.

RAD. *Rhaphan. Syl.* Of Horse Radish, or wild Radish, a most powerful Diuretick, but best in Juice, or the *Aq. Rhaphan, Compt.* if you Powder it, you will lose most of its volatile Salt, in which all its Specifick Vertue consists.

NASTURT. *Aquatic.* Of Water Cresses, these are an excellent Diuretick, and expel both Stone and Gravel from Kidnies or Bladder; besides, they warm the Stomach,
and

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and resolve gross thick Blood, by giving it a greater Tenuity.

THEA Virid. Green Tea. An excellent Gravel moyer, and very efficacious in most calculous Cases.

FLOR. & Bac. Spin. alb. Flowers and Berries of the Haw Tree ; both excellent Medicines. I knew a Gentleman, that voided a Dozen small Stones, by a frequent use of the Berries in Powder, and for the Flowers they were of that Esteem with Dr. *Ratcliff*, that he thought them deserving of being the Principle Ingredient in his *Aq. Nephritic.*

CROCI Anglic. English Saffron, tho' this Flower is suppos'd to remove the Serosities of the Blood, by the Emunctories of the Skin, yet I can by Experience speak it, that it hath great Influence upon the Kidnies, and clears those Parts, of Stones and Sabulous Concretions, as powerfully, and much more safely, than many Medicines more in Esteem.

SEM. Dauc. Sylvest. Petrosil. Urtic. Bac. Junep. All these are reputed powerful Diureticks, but being they are hot Medicines, are to be us'd cautiously. They excellently well agree, in the Stone Chollick, that is, where the latter is complicated with the former, and
Wind

Wind disturbs the Intestines, as well as Stone or Gravel the Kidnies.

Nuc Moschat. Of the Nutmeg; this of all Spices, is most eminent in Diseases of the Kidnies, and Bladder, Dr. *Ratcliff* thought it worthy of his Notice, and deserving of a Place in his *Aq. Nephritic.* of which hereafter, I have often us'd it, and does find that it very much moves Urine, but is liable at the same Time, to this Inconveniency, that it constipates the Body, and hinders Stools. Call it a Stone Breaker I cannot, because I never could perceive it indued with any such Power. It is a good safe Medicine, and may very much help in Bodies, that are not subject to Costiveness.

TEREBINTH. Venit. Cypr. Chyi. These three kinds of Turpentine, are the most in use; the two latter are best, for they are neither of them so hot as the former. All Turpentine excellently well agree, in Diseases of the Kidnies, and Bladder, they potently move Urine, and at the same time, relax the Body, which is an Advantage to the diseas'd; few Diureticks besides afford. The Spirit and Oil are great Secrets with many, and colour'd with Alcanet Root, are sold at extravagant Prices, for never failing Lythontripticks. It is certain, they mightily

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tily force both Stone and Gravel, but being very hot Remedies, will not agree with all Constitutions.

BALSAMA omnia Naturalia. All natural Balsams, as the Giliad, the Peruvian, &c. are of the same Vertues with Turpentine.

OMNES Aqua Minerales. All Mineral Waters especially the Chalybeat, are highly commended for powerful Diureticks; besides, they contribute a mighty Coolingness to the Body, and help to allay those Heats and Febrile Commotions of the Blood, Persons inclin'd to this Malady are subject to.

SAL PRUNELLÆ. The Salt of Prunella, or Nitre. It is very Diuretick and Cooling, and helps Inflammations of the Kidnies and Bladder.

Compound Medicines.

Aq. Nephritic.

Rx Flor. Spin. Alb. vel fenellorum recenter collect. ℥vi. Nuc. Moschat. no. x. Vin. Alb. gen. Cong. ii. m. & in Arena callida distil. ad siccitatem.

SOMETIMES

SOMETIMES the Berries are put in, instead of the Flowers, and, I think the change is for the better. It is a powerful Diuretick, and has all the Vertues of the Simples, which see in their proper Place.

Elixir Nephritic.

℞ Fol. Sennæ ꝑ Glycer. ꝑiii. Rhei opt. minutissimè incis. ꝑii. Sem. Fœnic. dulc. Coriand. Danc. Sylvest. ana ꝑiꝑ Croc. Ang. ꝑi. Sal. Tart. ꝑii. diger. in Spt. Vln. Opt. ꝑbii. ꝑiiii. leni Calore per Dies 3 postea add. Spt. Nitr. Dulc. ꝑii. & reservetur pro Ufu. Dos ꝑi. ad ꝑii. Mane Jejunè.

THIS Medicine I order'd my Father, after he was Seventy Years of Age, and indeed it well agrees with old Age, for it warms a cold Stomach, and chears the Vitals, and attenuates and digests the grosser Phlegm, which is apt to stuff the Lungs, and cause Asthma's, in those that have liv'd freely. Besides, it warm'd his old Blood, and made it circulate with greater Briskness, and he that was under a total Suppression of Urine, from a cold he had taken, for three Days before, was intirely reliev'd by only taking three Spoonfulls of this, with half an Ounce of Syrup of Marshmallows, twice.

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Elect. Nephritic.

R Gum Guaic. ℥i. Mellis Opt. ℥iiii. Pulv.
Croc. ℥i. m. Capt. q. Nuc. Mosc. Major. Ma-
neq. Nocte de Die in Diem.

THIS very powerfully evacuates, from both Kidnies and Bladder, all Sabulous Concretions, and is an excellent Remedy for all cold Phlegmatick Constitutions.

Lythontripticks.

STONE Breakers, or Dissolvers. They act upon the Stone, in Kidnies or Bladder, by insinuating their Nitrous Salts, into its Pores, and consuming the Lympha, that combines or cements the Arenulous Particles together, which thus broken or dissolv'd, they expel by the Urinary Passages.

RAD Saxifrag. Of Saxifrage or Stone breaker. The Vertue of this Root, lies most in a Nitrous Salt, with which it very much abounds. It is recommended by the Ancients, as a most powerful Stone breaker, and is a Principle Ingredient in most of their Compositions for dissolving the Stone, tho' little taken notice of, by the Moderns.

RAD.

RAD. Ononid. Of Rest-harrow. This is another admirable Remedy in the Stone, and is an Ingredient in *Horatius Augenius's* Lithontriptick Syrup, with which he avers, to have cur'd six Hundred of the Stone.

PIMPINEL Saxifrag. Of Pimpinel Saxifrage. It is a most powerful Lithontriptic, and breaks, dissolves, and expels Stone and Gravel, from both Kidnies and Bladder; and at the same time, it helps Stranguries.

PARSICAR. Arsmat. It is extremely Diuretick, and of very hot and biting Parts, and therefore not so proper, for those whose Bloods are apt to be inflam'd. My Father, when he was near Seventy, drank it in Tea every Morning, for a considerable time, and experienc'd great Benefit by its Use, voiding many large Stones, and much Gravel. I have order'd it, to several People, infus'd in Wine, with the like Success.

FLOR. Genist. Broom Flowers. They are as great a Stone-breaker as Physick affords, and for some time continued, they dissolve the Stone, and bring it away by Urine. I have known almost miraculous Effects, perform'd by these in Powder, they also make a good Water,

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Water, which is proper for the Intention
aforesaid.

SEM. Lithospermi & Bardana, of Grom-
well and Burdock Seeds. These are power-
ful Dissolvers of the Stone, and were in great
Esteem among the Antients; scarce a Pre-
scription, of any Efficacy, but what had one
of these Seeds for an Ingredient.

CANTHARID. or Spanish Flies. These,
if us'd inwardly, are to be given warily. A
Tincture will be best. I have given it with
great Success. Their Preparation in the Tin-
cture must be nicely observ'd; when given in
Substance, they excoriate the Bladder, and,
instead of healing, very often raise dangerous
Symptoms, as bloody Urine, Stranguries,
great Pain, and Heat of the Parts. Their
Corrector is Camphire; tho' nothing will so
entirely blunt the Acridness of their Salts, but
more or less they will produce the above-
mention'd Symptoms, if indiscreetly us'd. If
the Camphire does contribute any thing to
their Correction, it must be, by allaying that
lustful Appetite they are wont to excite,
when given alone.

MILLIPED. & *Apes*; Hog-Lice and
Bees. They are most powerful Resolvers of
all Tartarous Matter. Their Use, continued
M for

for some Time, have been known to produce marvellous Effects. They quicken the too sluggish Circulation of the Blood, and help forward the Secretion of the grosser Humors, apt to dam up the Emunctories of the Kidnies, and by their Nitrous Salts, which they plentifully abound with, they dissolve the Stone, and force it away by Urine. The *Millipedes* is the more powerful Dissolver.

Chymical Preparations.

I MUST confess, my Esteem for Chymistry is very much lessen'd, since I was inform'd of that, almost universal, unfair Practice, of adulterating their Medicines, in the Preparation; so that you can scarce meet with one, of any Value, that may be depended upon, as genuine. However, I deny not, but that there are some of them worthy of our Notice, and, which deserve a Place in Medicine.

SP. Nitr. dulc. or, dulcified Spirit of Nitre. A most excellent Lithontriptick, and best deserving that Name, of any Remedy I have yet mention'd. All Chymists agree, this Spirit will dissolve a Stone taken out of the Bladder; and, if it does not produce those happy Effects, when given inwardly, it is, because the Patient neither takes it in those Quantities necessary to be given, and, which,
if

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if discreetly us'd, might safely be taken, nor, continues the Use of it, so long, as is proper to produce such considerable Alterations.

TINCTUR. Salis Tartari; or, Tincture of the Salt of Tartar, is suppos'd to communicate in the same Virtues with the former; but, I must confess, I never could find it so efficacious.

SP. Salis. Spirit of Salt. It is much extoll'd, by several Authors, as a powerful Lithontriptick; and, tho', in my Practice, I have frequently us'd it, yet, cannot boast much in its Commendation.

SALES fixæ omnes. All fix'd Salts. Tho' I have long been of Opinion, that there was not any material Difference in the several Kinds of Fix'd Salts, yet, a very ingenious Gentleman has inform'd me, that, by the Assistance of a Microscope, he could perceive a manifest Disagreeing in the Figures, and Modifications, of those several Salts; and, what did not a little contribute to the confirming me in this Opinion, *viz.* That Bodies never lose, by Ignition, the first Principles of their constituent Parts, was a remarkable Passage I found in Sir Kenelm Digby's Treatise of Bodies, where, in the latter Part, he thus reasons: "*Quer-*
"*etanus*, the famous Chymist, and Physician

“ to *Henry IV*, relates a very wonderful Story
 “ of a *Polonian* Doctor, that shew’d him a
 “ Dozen Glasses, Hermetically seal’d, in each
 “ of which was a different Flower. For Ex-
 “ ample; A Rose in one, a Tulip in ano-
 “ ther, a Clove-gilly-flower in the third, and
 “ so of the rest. When he offer’d these
 “ Glasses to your first View, you could per-
 “ ceive nothing, but a Heap of Ashes, in the
 “ Bottom of each. As soon as he held some
 “ gentle Heat under any of them, presently,
 “ there would rise out of the Ashes, the Idea
 “ of a Flower, which would shoot up, and
 “ spread abroad, to the due Height, and just
 “ Dimensions, of such a Flower, and had
 “ perfect Colour, Shape, Magnitude, and all
 “ other Accidents, as if it really were that
 “ very Flower. But, whenever you drew
 “ the Heat from it, as the Glass, and inclos’d
 “ Matter, grew cool; so, by Degrees, would
 “ the Flower vanish, and fade away.” The
 Author receiv’d the whole Process at *Rome*,
 from *Athanasius Kircherus*, and endeavour’d,
 with all Industry, to effect it; but, no Art of
 his could bring it to Perfection: He con-
 cludes, from the aforesaid Phænomena, That
 there remains no Doubt, but that a great Part
 of the essential Substance of a Plant, is con-
 tain’d in its fix’d Salt. “ For, continues he,
 “ This will admit no Change into another
 “ Nature, but, will always be full of the Qua-
 “ lities,

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“ lities, and Virtues, of the Plant it is de-
“ riv’d from. ” So far he.

SAL Tartar. vel Genist. Salt of Tartar, or Broom. These claim the Preheminence, and, of all fix’d Salts, are the most powerful Lithontripticks. They dissolve the Stone, by consuming that Lympha that knits the arenulous Atoms together, and evacuate all fabulous Fragments of the Stone, from both Kidnies and Bladder.

Compound Medicines.

Aq. Nephritic; or, a Dissolver of the Stone in the Kidnies.

R $\&$ Flor. Genist. ℥iv. Nuc. Mosch. N $^{\circ}$ xii. Spt. Vin. Tartar. ℥vi. Aq. Font. ℥iv. dig. per diem naturalem postea distill. ad siccitatem, cuidem Libræ Aquæ adde Spt. Nit. Dulc. ʒi. & reservetur pro Usu.

Tinctura Cantharid. Lithontriptic.

R $\&$ Spt. Nitr. Dulc. Tinct. Salis Tart. ana ʒii. Cantharid. pptt. ʒii. Camphor. ʒiβ Nuc. Mosc. Croc. Angl. Macis ana ʒi. Opii crud. ʒii. Dig. simul per horas xx. leni calore in vase vitreo bene obturato, & cum subere Hermaticè sigillato, postea filtratur. Dos. gtt. xx. ad 60. in Haustu Vini Alb. Lisbonens. & Aq. Font. ana Part. Equal.

IN all Suppressions of Urine, it is a most sovereign Remedy; and in Stranguries, it gives present Relief, and removes the Pain and Inflammation of those Parts. I never prescrib'd it unhappily but once; and that was to an antient Gentlewoman, grievously afflicted with the Gravel, and having none of my own preparing by me, but only some in Digestion, I borrow'd a small Bottle of a Gentleman, to whom I had given the Prescription, and, not doubting of his Care in the Preparation, he had, unknown to me, only strain'd it thoro' an open Laun Bolter, which gave Admission to the gross Parts of the Cantharides to pass with the Liquor, which the Gentlewoman perceiving to settle, and supposing it some Sediment of the Medicine proper to be taken, shook it from the Bottom, and instead of Forty, took Fourscore Drops, (resolving to do it to purpose :) But, three Hours had not elaps'd from her taking them, before all the Symptoms were exasperated and grew more raging; to remedy which Disorders, I immediately filter'd Forty Drops of my own, and gave it her in a Glas of White Wine, which presently remov'd all the Symptoms, and intirely reliev'd her, I have order'd it to several with great Success, and never knew it to fail, if it was carefully prepar'd, according to the Prescription. Observe to filter it

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it through brown, or blotting Paper. In Cantharid's there is an Oleose Balsamick Salt, which they only communicate to spirituous Menstruums.

With the following Lithontriptick Syrup, *Horatius Augenius* doth aver, he cur'd six hundred of the Stone.

℞ Rad. Saxifrag. Rusc. Ering. Levist. Onon. Alth. Gram. Fænic. Petros. ana ʒβ Raphan. Sylvest. ʒii. Fol. Beton. Pimpin. Alth. Urtic. Puleg. Nasturt. Calam. Polygon. Min. Parietar. ana Mi. Fruct. Alkekeng. N^o xx. Sebest. N^o xv. Cortic. Rad. Lauri ʒiii. Sem. Ocymi Bar- dan. Petros. Dauc. Sefel. Mil. Solis ana ʒii. Uvar. Pass. Liquir. ana ʒvi. Capil. Ven. Poly- tric. ana Mi. coq. S. A. in Aq. Capillor. Ven. ℥x. in duplici Vase ad ℥vi. e quibus cum Sac- char. fin. ℥iv. & Mell. despum. ℥ii. f. Syrupus perfecte coctus, & Aromat. Cinamom. ʒi. Nuc. Mosch. ʒβ. m.





S E C T. III.

Cure of the Symptoms.

I BELIEVE there is no Distemper afflicting Mankind, that requires greater Care and Deliberation in the Management of its Fits; and more variety of futable Remedies, in the Application, than this of the Stone. And tho' some have disputed, whether really it be a Disease of it self, or only a Cause; yet, surely, the dreadful Effects proceeding from it, and the Impressions it makes upon the Body, must be sensible to every one, who for any considerable Time, have labour'd under the Severity of its Symptoms, so that no distemper can either affect the Kidnies or the Bladder, but what may have this for their Parent. And, I think, I may with some Reason, term all the Affections of the Kidnies and Bladder; An Iliad of Miseries arising, or deducing, their Original from this one, the Stone. Since, if it be not a Distemper it self, because it neither pains it self, neither of it self, is there any loss of the Continuity of any Part, yet, most certainly a Cause and
Symptom

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Symptom of Both, and that, so evidently, that I need not further enlarge upon Proof.

THOSE Gentlemen, who are called to assist, in alleviating those distracting Pains, which frequently attend the Paroxisms of this Maladie, ought well to weigh and consider, what is best to be done. It will require the most able Judgment to encounter all the Difficulties that sometimes arise. He must know how to abate the impending Symptoms, when to use Diureticks, when Opiates are necessary; in what Cases Cardiacs may most avail. How to make Revulsion, and draw off the fretting Humors, which, like a Torrent, rush upon the Kidnies. How to assuage the over exalted Motion of the Blood and Humors, and check the disorder'd Sallies of the Spirits, which vex the Patient with extream Heats; causing Fevers, Watchings, and not seldom Deliriums. These are carefully to be minded, as they shall successively arise under their several Forms.

LASTLY, A Physician being call'd to give his Advice in a dubious Case of the Stone, must be careful, not over boldly, to determine, before he hath maturely consider'd all the Symptoms appearing, and not like that eminent Gentleman, who lately being desir'd to assist a Patient under great Pain in his Groin,

Groin, from a Cold he had taken, over-positively resolv'd the Case to be a Stone in the Bladder, tho', in my Judgment, nothing less, and treated him accordingly. However, five Days after, a Tumor appear'd upon the Groin, which convinc'd him of his Rashness, but the unfortunate Gentleman, had the Misfortune to lose his Life.

IN Point of Cure, it is most proper to attack this Distemper in the very Beginning, as soon as ever the Patient perceives himself troubled with, or but doubts he hath the Gravel. In such a Case, it would not be a-miss, to imploy the most able Advice, for his better Satisfaction; for, certain it is, that while this Disease is in its Embrio, or only a generating, by a right Regimen and proper Applications, it may easily be removed, which cannot so well be effected; when length of Time, and the Accumulation of much Gravel hath damag'd the Texture of the Renal Glands: and it is a sad and melancholy Consideration, that most People are averse to the Physician, till the Desperateness of their Case shall make his Presence necessary. One great Misfortune incident to this Disease, is, that the Enemy seldom gives warning of its Approaches, but steals upon the Party unawares, having, very often, got possession of the Kidnies, before it betrays it self, or gives any Distur-

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Disturbance to the unhappy Patient. The first Symptom that attends the Gravel, is Pain, with a Numbness, about the Right or left Kidney, which is not distinguishable from the Chollic. To this succeeds a Strangury, and Heat, or rather sharpness of Urine; some few days after, a Sandy, Red Sediment adheres to the Bottom and Sides of the Urinal. These Symptoms most certainly indicate Gravel about to affect those Parts. In such a Case, let us consider the most proper Means to be used. Immediately to fall upon a Course of Diureticks, would be very preposterous Practice, and might greatly damnify the Patient, by hurrying such a load of Humors to the Kidnies, as might dam up the Secretory Vessels, and cause an intire Suppression. First, Then we ought very carefully to observe the Age and Temperature of the Patient; and consider, whether Phlebotomy might not safely precede all other Institutions; in some Cases it seems absolutely necessary, especially, when Inflammations affect those Parts, and great Heats and Thirsts, with a Fever, oppress the Body. Under these Circumstances, to Bleed may be of great Advantage. But, then, the Ancients had a great Contest about the Part, in which the Vein was to be open'd, some declaring for the Vena Mediana, in the Arm; others, for the Vena Saphæna in the Thigh. But, I think,

think, the Circulation of the Blood determines that Controversy, and one Part cannot be more preferable than another, but as it may be more commodious to the Operator, and safer in the Operation. Indeed, in extreme Cases, as Apoplexies, Lithargies, &c. the nearer the Part affected we open a Vein, the stronger is the Revulsion, and more readily made, which is of some Consequence, where the Danger is so great from Delay: but then, here, we have no such Difficulty to encounter with; for, I never would advise Bleeding in this Case, but in the beginning of the Disease, and when there was hopes of curing it, not when it was become desperate; and the Patient had suffered frequent Rackings, and lost much of his Strength and Spirits, in the several Conflicts; I say then, to bleed, is but one Degree from flinging him into his Grave; and this, more especially, holds good, if Age be growing on him. For, after the Sixtieth Year, every Ounce of Blood a Man parts with, he looses so much of his Life, and, it is the same with Women, after the Fiftieth. Secondly, What Relief may be expected from a Vomit, to clear the Stomach of that Load of Phlegm, which often hinders Digestion. And, indeed, to those of a strong Constitution, this way of Beginning may not be improper: But, gentle Catharticks, and mild Lenatives, I should much prefer

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prefer to those of weaker Constitutions ; for these gently cool the Body, and allay those Heats, and febrile Commotions of Blood and Spirits, that greatly vex the Patient, and put him to great Disorders. But, this remember, that neither Vomits, nor the stronger Catharticks, are ever necessary, while Pain continues to distress the Parts.

FLUAT Sanguis è Vena Brach. ad ℥x. vel ℥xii.

Rx Rad. Ipecacuhan ℥β Aq. Card. B. ℥iβ
Syr. Violar. ℥i. Peon. Compt. ℥iii. m. f. Haust.
Vomit. Hora Idonea sumendus.

OR, If Vomits be judged improper, the following Potion may be given.

Rx Fol. Sen. ℥ii. Rhei. incis. ℥β Rad. Glycer ℥ii. Sem. Fœnic. dulc. ℥β Sal. Genist. ℥i.
Coq. in Aq. Epsom. ℥β ad ℥iv. Col. cui adde
Syr. Rosar. Solut. Man. opt. Dis. ana ℥i. m. f.
Potio mane sumendus.

IN those more advanc'd in Years, I have observ'd a Scruple of Calomel, taken over Night, to prepare the Humors, to have given great Relief. What I mean by preparing the Humors, is to dilute the grosser Phlegm, and render it more fluxile, which greatly abounds in Old People. And, truly, this Way of preparing the Humors, tho' an
An-

Ancient Custom is not to be condemn'd, if done after a right Manner, and at proper Seasons. But, the Method of the Ancients was not capable of answering their Intentions ; for a few inciding Syrops were commonly ordered to precede a Potion, which, what Influence they could have in disposing the Humors to a more plentiful Evacuation ; any Man of an ordinary Capacity may easily conceive : But, Mercurius Dulcis, or its Off-spring Calomel, gives to the tenacious, viscid Phlegm, a greater Fluidity, by diluting it with the serous Lympha, spued out of the Glands of the Stomach, Intestines, and Mesentery, which it chiefly affects. When the Humors have been sufficiently diluted, and evacuated ; it then remains, we have recourse to proper Alteratives. And, this Intention is best provided for, by a liberal Use of the testacious Pouders, which does enrich the Blood, and invigorate the Spirits, giving a greater Briskness and Activeness to the whole Animal Oeconomy : Besides, they are mildly Diuretick, for they absorb all the Acidities and Sharpnesses of the Blood, and make an easier and more gentle Secretion of the Serum in the Kidnies. All violent Diureticks, so long as the Symptoms continue to vex the Patient, are to be laid aside, for they only increase the Pain, and Torture, and render the Patient more miserable.

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IN slight Inflammations of the Kidnies, when the Pain hath not been dolorous, I have known great Relief given from the following Præscriptions.

Rx Pulv. E. Chel. 69. Compt. ʒi. Marg. pptt. ʒß
Croc. Ang. Gr. iv. Camphor. gr. ii. m. f.
Pulv. vel,

Rx Spermat. Cæti ʒi. Oc. 69. pptt. ʒß Sa-
lis Prunellæ Gr. vi. Syr. Violar q. f. m. Bolus
6ta. quaque Hora sumendus superb. Haust.
sequent. Emuls.

Rx Amigd. Dulc. excort. ʒi. Sem. Lactuc.
ʒß contund. quam optimè sensim. affund. Aq.
Hord. ʒß cui adde Aq. Nephritic. Dr. *Ratcliff.*
ʒß misce Emulsio bibat copiose, cum Pulvere
vel Bolo : Vel,

Rx Aq. Lact. ʒvi. Aq. Nephritic. Dr. R. ʒiv.
Aq. Rosar. Damaf. ʒi. Sacchar. perlat. ʒiii.
m. Julap. Capt. Coch. 4tr. ut supra.

IN all Inflammations of the Viscera or Kid-
nies, Oleaginous Glisters are of singular Use,
they lubricate the Passages, and give an easier
Descent to the Excrements, and both cool
the Body, and abate the Inflammation.

R̄ Seri Lact. Ol. Lin. Com. ana ʒvi. Syr.
Viol. ʒii. m. Enema.

At Night, I always take Care, to secure the Tranquility of the Spirits, by gentle Anodines.

R̄ Aq. Paralyſſeos ʒiβ Ol. Amigd. Dulc. ʒvi.
Syr. Papaver. errat. ʒi. Spt. Nit. Dulc. gtt. x.
m. f. Hauſt. Hor. Som. ſumendus.

THESE in ſlight Caſes only, when the Pain and Inflammation are not grievous.

BUT, here I cannot omit a very remarkable Caſe, of an intermitting Feaver, whoſe Paroxiſms were ſeated in the Kidnies, but kept the Returns, and Intermiſſions of its Fits, as exact as the moſt regular intermit- tent Fever I ever had under my Care. The Symptoms were a Strangury, with great Pain about the Loyns, to which ſucceeded Vomitting, which, as conſtantly attended, as the Fits return'd : Theſe were follow'd with the excerning little Quantities of ſlimy Urine, intermix'd with a little Gravel. I order'd him ſeveral Medicines to no purpoſe ; at laſt, I preſcrib'd the following, which gave him great Relief. In all intermitting Pains we muſt diſtinguiſh between removing the Fits and curing

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curing the Disease ; therefore, to prevent the Return of the Fit, or, at least, to break its Force, that it might not return with that Violence it usually had done before, I prescrib'd him the following Febrifuge, to be taken two Hours before the Time he expected it.

R^x Aq. Lact. Alex. ℥ii. Aq. Theriacal. ℥vi. Spt. Vitriol. gtt. xii. Ol. Absinth. gtt. i. Syr. Crocin. ℥iii. m. f. Haust. And to support the Spirits in the Fit, the following.

R^x Pulv. Marg. pptt. ℥i. Succin. pptt. ℥β. Croc. Pulv. gr. vi. Camphor. gr. iv. Ol. Nuc. Mosch. gtt. i. Mis. f. Pulvis. capt. i. 4ta quaque Hora urgente Paroxysmo superb, Haust. seq. Julapii.

R^x Aq. Malvæ fβ. Aq. Peon. Com. ℥iv. Syr. Papav. Errat. ℥iβ. Spt. Nit. Dulc. ℥β. m. And then compleated the Cure with the following.

R^x Extract. Cortic. Peru ℥ii. Terebinth. E. Chyo ℥iβ. Pulv. Succin. ℥i. Croc. Pulv. ℥β. Camphor. ℥i. cum q. f. Bals. Peru, m. Pillul. E. ℥i. N^o x. capt. 5. Dosi 6ta quaque Hora extra Paroxysmo. superb. Haust. seq. Infusionis.

R^x Salv. Hort. Mi. Limon. cum Cortic. in tennes Taleolas concis. N^o i. Sacchar. Alb. refin. ℥i. Cochincl. Pulv. ℥i. Infunde in Aq.
N Bul-

Bullient. ℥i. Stet in Infusione per Horas 4,
& cum frigid. est Col. cui adde Vin. Alb. Mont.
℥ss Spt. Nit. Dulc. ʒi. m.

WHEN Symptoms of the Gravel or Stone
arise, in Persons troubled with the Hypochon-
dria, as very often do happen, then Volatile
Salts are best, for the Basis of a Remedy.

Rx Sal. Vol. Ol. gtt. xv. Sal. Volat. Corn. C.
Vol. Armoniac. ana gr. vi. Vin. Canar. ʒiii. m.
Haust. capt. 2bus Horis ante Prandium, &
rept. Hora 6ta Vesperis, de Die in Diem.

Rx Marg. pptt. Test. Ovor. à Corticibus in-
terioribus purgatis, ana ʒi. Sal. Volat. Suc. ʒii.
Croc. Ang. ʒβ. m. Pulv. divid. in Chartulas 6.
Capt. 1. 6ta quaque Hora in Haustulo ali-
cujus Julapii Cardiaci vel Emulsionis.

Rx Ol. Amygd. Dulc. Syr. E. Mecon. Aq. Ce-
rasor. Nigr. Peon. Comp. ana ʒβ. Aq. Lact. ʒi.
Spt. Nit. Dulc. gtt. xvi. m. f. Haust. Hora
Somni sumendus.

THESE Medicines, not only, evacuate from
the Kidnies all fabulous Concretions, but, also,
give a Briskness to the present Disorders, in
Respect of the Hypochondria, by allaying the
Preternatural Heats of the Blood and Spirits;
and this ought carefully to be minded, That
where

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where two, or more, Distempers are complicated in one Body, whether the Remedies intended to relieve the one, may not prejudice the other. Thus, to Bleed, or briskly purge, a Melancholy, or Hipish Patient, labouring under the Symptoms of Stone, or Gravel, commonly does infer great Disorders, and, may prove of that dangerous Consequence, by weakening the Spirits, as not to be remediable. In this Case we ought to begin with gentle Anodines, which curb the unruly Disorders, and strengthen the Spirits; and, if Evacuations be necessary, they ought to be manag'd with gentle Laxatives, and emollient Glisters.

IN complicated Cases, as, in the Nephritick Cholick, that is, when Wind disturbs the Intestines, at the same Time that Gravel affects the Kidnies, I have observ'd great Relief from the following Administrations.

R̄ Decoct. Com. pro Enemat. ꝑ Terebinth. Venet. in Vitell. Ovi dissol. ℥vi. vel ℥i. Elect. de Bac. Lauri ℥iꝑ Ol. Lin. C. ℥iv. Mel. Viol. ℥ii. M. Enema injiciendum, ut opus sit.

R̄ Tinctur. Sacrae. ℥ii. Ol. Amygd. Dulc. ℥vi. Syr. Ros. Dam. ℥ꝑ M. Haustus, sumendus post Reditum Enematis: Vel,

R $\&$ Elixir. Salut. Ol. Lin. fine Igne extr. ana
 ʒiʒ Syr. Violar. ʒi. m. f. Hauſt.

I N the mean Time, let the Patient drink Chamomil Tea, or Poſſet-Drink, with a few Chamomil Flowers infus'd, or plain Poſſet-Drink, in Caſe his Stomach cannot bear the former.

W H E N excruciating Pains ſeize the Patient, from a Stone fix'd in either of the Ureters, then is the Advice of the Phyſician moſt neceſſary, but leaſt available; the miſerable Patient greatly complaining, and earneſtly deſiring Eaſe, but cannot obtain it. In this Caſe, I ſhall communicate what, Experience hath confirm'd to me, may prove of great Advantage; and, with which Remedies, I reliev'd the Patient, after Convulſions had ſeiz'd the Brain, from the racking Torture of the Symptoms, that then oppreſs'd him.

R $\&$ Aq. Theriacal. Aq. Ceraſor. Nig. Aq. Nephritic. noſt. Deſcriptionis ana ʒiii. Tinct. Croc. Vin. Canarini fact. ʒiʒ Spt. Lavendul. Compt. ʒʒ. Syr. E. Mecon. ʒii. M. Mixt. Cardiac. Capt. Cochlear. iii. 3tia quaque Hora ſaviente Doloꝛe.

R $\&$ Phylon.

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R \acute{e} Phylon. Rom. \mathfrak{z} i. Castor. Ruf. Sal. Vol.
Succin. ana gr. vi. Confect. Alkerm. q. f. m. f.
Bol. Hora Somni sumendus.

R \acute{e} Tinct. Castor. Spt. Nit. Dulc. Sal. Vol.
Ol. ana \mathfrak{z} i β Laud. Liquid. Syd. \mathfrak{z} i. m. Capt.
gtt. 30 vel 40 in Haustulo Julap. suprapræ-
script. vel in Cyatho Vin. Alb. & Aq. Font.
ana Part. Equal. 4ta quaque Hora.

AND, to enlarge the Cavity of the Ureter,
for an easier Passage to the Stone, I order'd a
Servant to foment all the Pain'd Parts, with
warm Stupes, wrung out of a Decoction of
Marshmallows, and Chamomil Flowers, and
to bath all about the Descent, with the fol-
lowing lenifying Liniment.

R \acute{e} Ol. Amygd. Dulc. Ungt. Dialth. ana \mathfrak{z} ii.
Ol. Lillior. Camomil. ana \mathfrak{z} i. Ol. Camph. \mathfrak{z} vi.
m. f. Linimentum, parti dolenti parùm calli-
dè applicandum sæpiùs in Die, sæviente Do-
lore.

THESE Medicines were intended to sup-
port the Spirits, under that racking Torture,
and dismal Conflict, to assist Nature in encrea-
sing the Velocity of the Blood's Motion, in
its several Circulations, that the Secretions of
the Serum, by the Renal Glands, might be

perform'd with a greater Impetus, which, falling upon the Stone, might happily protrude it into the Bladder; and, unless it be effected by this Means, I see no Hopes, but that, of Necessity, the Patient must change this Life for another. If the Pain continue very violent, be careful to repeat Glisters often, and, that as warm as the Bowels can well bear them.

BUT, if the Stone force its Way through the Ureter, and so descend into the Bladder; then we must examine, what Accidents may have happen'd to those Parts in its Passage; and, if bloody Urine be excern'd, and Flakes, or thin Filaments, swim in it, like the minute Parings of Leather, there is great Reason to fear an Inflammation, if not a Laceration of the Ureter; and, this more so, if the Pain be very acute, after the Descent of the Stone. In this Case, I would advise such Remedies, as may lenify, and abate the Inflammation, heal the Excoriation of the Pelvis, if such be fear'd, and, at the same Time, ease the Pain. Oily Medicines, in this Case, greatly avail: They not only assuage Pain, and abate the Inflammation; but, by their Oily Particles, convey'd to the Urine, do so blunt its sharp Salts, that they are, in a great Measure, depriv'd of that fretting Quality, whereby, in all Probability, they might increase the Inflammation.

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Inflammation; and, consequently, in Time, lay the Foundation of an incurable Ulcer: So that in all grievous Paroxisms, where the Pain is Lancinating, or, as it were, cutting with Knives, I would recommend their Use to Practice. Neither can I find, that any Symptoms can concur, to render them unsafe to be given.

Rx Aq. Cerasor. Nig. ℥i℥ Ol. Lin. ℥x. Theriac. ℥℥ Laud. Liquid. gtt. xv. Syr. de Mecon: ℥vi. m. f. Haust. singulo. Nocte sumendus.

Rx Aq. Lact. Alex. ℥i℥ Ol. Amygd. Dulc. ℥i. Syr. Violar. ℥℥ Spt. Nit. Dulc. gtt. xii. Sal. Prunel. gr. x. m. Haust. sing. Mane sumendus.

AND, to digest the Ulcer, if such there happen, I would advise him to take the following Pills.

Rx Terebinth. e Chyo ℥iii. Marg. pptt. Pulv. Hayly ana ℥i℥ Succin. pptt. ℥i. Croc. Ang. pulv. ℥℥ Camphor. ℥i. cum. q. f. Tinct. Myrrh. m. Pillul. exiguæ, quarum 5que capt. Dosi bis in Die superb. Haust. Emulsion. seq.

Rx Rad. Symph. ℥i. fol. Malv. Mi. Coque in Aq. Hord. ℥biii. ad ℥bii Col.

Rx Amygd. Dulc. ℥i. Sem. Papav. Alb. ℥vi. contunde quam optimè superaffund. Aq. Hord.

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Hord. suprap̄script. & f. Emulsio, cui adde
Aq. Peon. Comp. ℥iv. Sacch. ℥vi. Spt. Nit.
Dulc. ℥i. m. bibat copiose, & ad Libitum.

BUT, If the Pain be unsufferable, and Watchings threaten a Delirium, we must then have Recourse to the strongest Narcotics. The Pillul. Starkii vel Math. certainly best agree in Diseases of the Kidnies and Bladder.

R̄ Pil. Math. gr. xii. vel xv. ad ℥i. dissolve in Spt. Juneper. ℥iii. Aq. Lact. ℥i. Spt. Nit. Dulc. ℥i. m. f. H. Vel,

R̄ Pill. Starkii gr. xv. ad ℥i. vel 3℥ dissolve in Spt. Juneper. ℥vi. Aq. Cerasor. Nig. ℥i℥ Spt. Nit. Dulc. ℥i. m. f. Haust.

LET none wonder, that I am so bold in prescribing such large Doses of Opium; since I have seen those very Quantities given, and oblig'd to be given, where the Pains have been very vehement. But, beware, lest from an over-liberal Use of Opiats, only necessary from the Dreadfulness of the Symptoms then pressing the Patient, that a Costiveness does not ensue; and, therefore, take great Care to guard against that Inconveniency, by frequently administering Oily Glysters; such as the following:

R̄ Ol.

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R \acute{e} Ol. Lin. Com. Ol. Lillior. Alb. Chamo-
mil. ana \mathfrak{z} iii. Ol. Junep. Chym. extract. $\mathfrak{z}\beta$
m. f. Enema injiciendum pro re nata.

I HAVE sometimes observ'd, that a Stone in the Bladder, by its Asperities frequently grating against the Nervous Tunick, hath not only form'd an incurable Ulcer, but, communicated a Palsy to the Nerves, disseminated in the Sphincter Muscle. In this Case, the Patient is in the most miserable Condition it is possible for any Mortal to labour under: His Urine continually dribbles from him Drop by Drop, and he is always under Torture; and, if he happen to make any Quantity of Urine together, the Torture is augmented, and his Pains become unsupportable. This Case is incurable, especially in Old People; but, to appease, and, in some Measure, to assuage the Symptoms, Means may be us'd. In this very Case I shall communicate a Prescription, that did very great Service for Mr. *John Graves*, of *Penrith*, in *Cumberland*, who implor'd my Advice, while in that Place. The Prescriptions I order'd him, were the following:

R \acute{e} Phylon. Roman. \mathfrak{z} i. Camphor. $\mathfrak{z}\beta$ Ent.
Ven. $\mathfrak{z}\beta$ Croc. Ang. gr. vi. m. f. Bol. Hora
somni sumendus superb. Haust. seq.

R \acute{e} Aq;

R \acute{e} Aq. Cerafor. Nig. ℥ii. Peon. C. ℥i. Laud.
Liquid. gtt. vx. Syr. de Mecon. ℥ii. m. f. Haust.
These at Night only.

R \acute{e} Oc. Can. pptt. Pulv. Hayly ana ℥i. Ca-
stor. Ruf. gr. 7. Pulv. Sem. Hyosciam. gr. vi.
m. f. Pulv. capt. crastino Mane, & dehinc 6ta
quaque Hora ad tres vices cum ℥ss Emuls. seq.

R \acute{e} Fol. Malvæ. Mi. Hord. Gallic. ℥i℥. Rad.
Alth. recenter collect. ℥i. Sem. Fænic. Dulc.
℥vi. Rad. Glycer. ℥ss coq. in Aq. Font. q. s.
ad Col. ℥ii. sub fine Coctionis injice Gum. Ara-
bic. contus. ℥i℥ & Col.

R \acute{e} Amygd. Dulc. Excort. ℥i℥ Sem. Papav.
Alb. ℥i. contunde quam optimè in Mortario
Mam. sensim affund. decoct. suprapræscript.
℥i℥, cui adde Aq. Peon. Compt. ℥vi. Syr. Bal-
sam. ℥i℥ Spt. Nitr. Dulc. ℥i. m. Emuls. capt.
℥ss cum Pulver. Mane & 6ta quaque Hora.

With the use of these Medicines, I ef-
fected more than could be expected under
such dreadful Circumstances. First, The
Emulsion, in Conjunction with the other
Medicines, did most bravely quiet the Or-
gasm of the Spirits, greatly distress'd with
long Watchings: For, although the Semina
Papaverum, are but a gentle Anodine, and
do scarce contain any Narcotick Quality;
yet

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yet the Sem. Hyosc. both in the Phylon Roman and Pouders, has a peculiar vertue in restoring the lost Tone of the Bladder, and is a Specifick, where the Patient cannot hold his Water: In short, These Medicines had so good an Operation, that he was able to make his Urine in great Quantities, which before, he did Drop by Drop, and his Pains, which before were continual, and grievously Racking, became now intermitting. I must confess, even here, when he did Urine, that his Pains were near as great as before, but it was no little matter of Comfort to him, that he could enjoy some time of Respit from his Dolors, which before he had not done, Night nor Day, for several Months. I order'd him several other Medicines, but the greatest Relief was given from these Administrations; besides, his Glafs had run above Sixty Years, and he was much worn out with Nephritick Paroxifms, having suffer'd, from the Stone, near Twenty Years, and therefore an entire Cure was the less to be expected under those Disadvantages; and, I think proper here to add two Caveats: The first is, never to prescribe much Physick while the Patient is under great Pain; for Loads of Physick will sooner over-power the Spirits, than relieve the Patient. Secondly, Always take Care to fraim as agreeable Medicine as possible, that it may sit easy upon the Stomach, and friendly associate

sociate with the Blood and Spirits; for that many Times having to do with Persons of nice and curious Dispositions; whose Stomachs may be squeamish, and naturally loath an ill tasted or nasty looking Medicine. To remedie which Inconveniency, it highly concerns the Physician to frame his Compositions in the Prescription so artfully, that they may not only not be ungrateful to the Stomach; but, at the same time, may confess their Virtues in the Cure of the Disease they are given for. And if it be objected; that a Physician ought chiefly to regard the Operation of his Medicine, and its Agreeableness with the Constitution of the Patient, rather than its Form. Yet, I can answer to the Objection, and, with Experience, aver; That the Form shall, many Times, so alter the Matter of a Medicine, as to its Virtues, as quite to invert the Nature of its Operation. Thus, I have seen an Opiat, given in a great Hurry, and Disorder of the Spirits, where the Pains have been most sharp, and raging, and, in other Cases, besides the Stone and Gravel, which being in Form liquid, and turbid, from the Jumbling together of many Ingredients, has been so far from quieting the Orgasm, that a downright Vomiting hath ensued; and, few are insensible of the bad Effects of Vomiting, upon Persons under Tor-
der,

der, and Intention, of a Medicine, is so far inverted, that its Action is produc'd directly contrary to the Design it was given for, and, instead of that sedate Tranquillity, and Repose, expected from its Operation, and, indeed, not only expected, but design'd, from the Administration of all Opiats, there ensues a greater Disturbance to the Spirits. Such a Heterogeneous Inversion of a Medicine, must induce new Inconveniencies, by augmenting the Hurry, and Disorder of the Spirits, already too great for the miserable Patient to struggle with. Sometimes it happens, that a Stone in the Bladder, moving from Part to Part, may, accidentally, fall upon the Neck, and be the Cause of a total Suppression of Urine. In this Case, *Fernelius* advises, to mount the Patient's Heels above his Head, and, by shaking the Body, so inverted, may make the Stone descend from the Neck. This, also, is the Advice of *Riverius*; but, I think, the Catheter, employ'd in thrusting the Stone from the Neck, is a more agreeable Way, and less incommodious, especially, to a Person lying under violent Pain, from a Stone lodg'd in the Neck of the Bladder: Not that I believe the Stone in the Neck, always the immediate Cause of a Suppression of Urine; for, it may happen, and, many Times, does fall out, that the Stone, or Gravel, grating upon the Nervous Tunick of the Bladder, does
so

so convulse the Sphincter Muscle, that not any Urine can be forced out. For, I remember, being call'd to assist, in the Case of a young Gentleman labouring under a total Suppression: I prescrib'd him several Medicines, agreeable in those Cases, both to ease his Pain, which was very violent, and to hasten his Urine; but, not finding Success to answer my Expectations, and his Friends being positive, that the Stone, which certainly he had, was lodg'd in the Neck of his Bladder, and was the sole Cause of the Suppression; I then requested of them, that a Surgeon might be sent for, to search him; who, being come, and examining the Neck of the Bladder, with his Catheter, assur'd me, that the Passage was secure, and free, only, that the Catheter made a little Resistance at its entering the Neck, and that the Stone lay near two Inches below, in the Cavity. Upon this, I concluded, the Sphincter Muscle was convuls'd, and, accordingly, prescrib'd the following Medicines, which made him Urine in great Plenty.

FIAT Venæsectio in Brachio, & detrahatur Sang. ℥xii.

Rx Philon. Rom. ℥ii. Pulv. de Gut. ℥i. Castor. Ruf. gr. vi. Croc. Ang. gr. iv. Sal. Succin. gr. iv. Camphor. gr. iii. Syr. Peon. C. q. s.
m. f.

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m. f. Bol. statim sumendus, superb. Haust.
Emuls. seq.

Rx Amygd. Dulc. ℥i. Sem. Papav. Alb. ℥vi.
Peon. Mar. ℥β contunde quam optimè in Mor-
tar. Marm. sensim affund. Aq. Cerasor. Nig.
Aq. Hord. ana ℥bi. cui adde Aq. Peon. Compt.
℥iii. Syr. ejusd ℥ii. m. f. Emulsio.

Rx. Spt. Lavend. Compt. Tinct. Castor. Spt.
Nitr. Dulc. Spt. Salis Arm. Laud. Liquid.
ana ℥i. m. capt. gtt. 60. in Haust. Emuls. 3tia
quaque Hora ad 4r. vices.

Rx Fol. Rorif. Flor. Lavendul. Major. Ros.
Rub. fic. Flor. Chamomel. ana Mi. coq. in Aq.
Font. & f. Fomentatio, & cum callidis Stupis
foveatur pars affecta.

With the Use of these Medicines, in less
than three Hours Time, he made Plenty of
Urine; and all his Symptoms, in two Days
more, for that Time, intirely left him.

It happens, tho' rarely, that a Stone, de-
scending out of the Bladder, shall adhere, and
stick so fast in the Urethra, as not to be
forc'd out by any outward Applications. In
this Case, we must cut into the *Penis* Longi-
tudinally, directly upon the Stone, and so,
with a fit Instrument, lift out the Stone; and,
then

then the Wound is to be cleans'd, fomented, and dress'd, with proper Bandage, according to Art. But, before this Operation be attempted, it will be necessary all Means, to remove it, be first assay'd in vain; for, it is a rugged, tho' no dangerous, Operation, and, therefore not lightly to be undertaken.



S E C T. V.

HAVING done with the Symptoms, proceed we, in the next Place, to consider the grand Indications of Cure; but, before I touch upon these Points, it will be expected from me, that I first demonstrate the Possibility of a Dissolution, and the Reasonableness of reducing it to Practice: For, what avails all our fine spun Theories in Physick, but to embellish our Notions of the Nature and Cause of Diseases, and to render our Practice more successful in their Cure. I will, therefore, divide the present Matter of my Discourse into three Propositions, and, will argue, upon each Head, with all that Justness, as well as Plainness, of Reasoning, I am capable of.

Prop. I.

REASONS demonstrating, that the Antients did dissolve the Stone, and remove the Gravel; and, very often, did make entire Cures of Patients labouring under these Affections.

Prop. II.

REASONS offer'd, why so few receive Benefit, at this Time, under the aforesaid Diseases, considering the Advantages of the Modern Discoveries.

Prop. III.

REASONS proving, even to a Demonstration, that the Stone may safely be dissolv'd, without any Detriment to the Body,

UPON the well managing of these three Points, depends the Issue of this Controversy; and, if I make good these Propositions, by plain Reasoning, supported with Matters of Fact, I hope, I shall answer the Design of my Writing; for, to reason from Facts, is the plainest Demonstration that can be given of a Thing, and, is like Reasoning from Example, which has the most powerful Influence to incline the Will. But, here I think it not
O impro-

improper, if, before I descend to Particulars, I first observe to you, what I mean by the Antients, since their Practice is most concern'd in the first Proposition. And, First, I do not confine the Antiquity of Physick to the Times of *Hippocrates*, who flourish'd above five Hundred Years before the Birth of our Saviour, and was Cotemporary with *Democratus*, the Philosopher; nor, do I limit it to the Times of *Galen*, who liv'd above six hundred Years after; but, I comprehend all that vast Space of Time from *Hippocrates*, down to near the Middle of the last Age, when the Circulation of the Blood began to dawn. For, it is certain, that the Practice of Physick, in all its Essentials, was little different, in the Beginning of the last Century, from what it was in the Times of *Hippocrates* and *Galen*; and, little Improvements were made, 'till the immortal *Harvey* appear'd upon the Stage, and demonstrated the Circulation of the Blood, and the natural Course, and Secretion, of the several Juices round the Body. A Task that had long lain hid, from the Foundation of this Noble Art, 'till After-Ages; and was, by a peculiar Providence, reserv'd for the Discovery of that Great Man.

The Arguments, in Defence of the first Proposition.

To support the Reasons I have offer'd to make good, in Defence of the Antients, I shall consider their own Practice, which will best

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best justify the Reasonableness of a Dissolution. For, if I prove there ever was a Dissolution of the Stone effected, (as I shall demonstrate many) it will be a strong Argument of the Possibility of the Thing. It will prove the Matter possible, tho' not feasible, to be done: But then, if we consider their Times, and the Tractableness of the People under their Care, we shall have the less Reason to wonder, that their Success, many Times, should surmount our Credit. For, it was a usual Thing, formerly, for a Physician to enjoin a Prescription a full Year, which seldom did fail in producing miraculous Effects, in Distempers, not only desperate of Cure, but of a long Continuance, as to Time. *Sennertus*, a sober Author, and, of no small Esteem in his Time, however his Voluminous Writings be disregarded by the present Generation, gives us a Relation of a Maid he cur'd of a stubborn Leprosy, which had afflicted her many Years, whereby it might naturally be suppos'd, the Distemper was interwoven with the Constitution: The whole Stress of the Prescription lay in Twelve Grains of Antimonium Diaphoreticum, which she took every Morning for a Twelve-month. And that celebrated Physician, *L. Riverius*, in this very Case I am treating of, seems to allude to the same Practice of Long-Continuance of a Medicine;

where, treating of the Stone in the Kidnies, he makes Use of this Expression.

“ In Usu Medicamentorum Calculum frangentium & expellentium, observandum est, ea non semel aut bis esse usurpanda, sed pluries.” And, a little after, he proposes Medicines, both to remove the Symptoms, and cure the Disease, by breaking, dissolving, or expelling the Stone, if it be little; and then subjoins, “ Hisce Remediis curatur Dolor Nephriticus, & Calculorum Dissolutio atque Exclusio promovetur.

A M A T U S Lusitanus, a Man of admirable Parts, and very curious, as well as exact, in the Delivery of his Observations, relates a remarkable Case, of a certain
 Cent. 2. Monk, who, labouring under the Gout, and
 Curat. 68. Stone in the Kidnies, at the same Time, was happily deliver'd from both, by the Use of the following Remedy, after he had experienc'd all others in vain, viz. Cyprus Turpentine. But, then we must remember, he did not take it a Morning or two, and so away, or, so many Weeks or Months, *sed tandem Terebinthina Usu, intra sex Menses liberum a dictis Morbis evasisse*; that he continued its Use six Months, and so was freed from the aforesaid Diseases. After which he subjoins the Manner of his taking it, in these Words, *Deglutiebat autem singulis Diebus Terebinthinae*
 Par-

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Particulam Nucis Magnitudine Saccharo admixtam; that he took, every Day, the Bigness of a Nut, wrapt up in a little Sugar. And *Riverius*, speaking of the Excellency of Turpentine, in Affections of the Kidnies, proposes the Reason why a Terebinthinated Medicine, us'd longer and more frequent, is not so apt to inflame those Parts, as some other Diureticks; *Ratio autem cur Terebinthina frequenter usurpata non nocent sicut alia Diuretica, ea est, meo Judicio, quia Urinas movenda simul Alvum laxat, ita ut crassiores Humores per Alvum deturbentur, qui ab aliis Diureticis ad Renes deducerentur.*

AND the same *Amatus Lusitanus*, delivers Cent. 7.
the Case of a Gentleman, that had suffer'd Curat. 78.
much by Nephritick Paroxysms, from a Stone in the Kidnies, *pro quibus abigendis Symptomatibus*, as he there expresses himself, *multis est usus Remediis, frustra tamen.* That he receiv'd no Benefit from the many Remedies he had taken; at length, being advis'd by a Friend to eat plentifully of Pontic Filberds, he, by the daily use of which, became perfectly well, and this, after he despair'd of Cure, as his own Words imply. *At cum præter spem, ex cujusdam Commendatione, Avellanis in Victu uteretur, liber & sanus a tantis Affectionibus evasit.* And by their daily use so intirely was he reliev'd, that he never after

perceiv'd the least Symptoms to disturb him. And the same Author in his Disputation adds these Words. *Non solum Vir hic de quo agimus, per Avellandarum Esu, sanus ex hac mala Affectione fuit, sed plures alii.* You see this was not the only Person that was cured by the Use of these Pontic Filberds, but several others had experienc'd the same Benefit. And, Crato greatly extols their Use in these Words, *Me compertum habere, non paucos sævis Cruciatibus, Calculi diu Affectos, usu Avellandarum Ponticarum liberatos.* That he had observ'd not a few cured by their Use, that had long suffered cruel Rackings of the Stone.

Obser. 58.
Prax.

ZACUTUS LUSITANUS hath a memorable Relation in his second Book; where he takes Occasion to extol the admirable Vertues of the natural Balsam, I suppose he means the Balm of Gilead, *Eo que Balsamo liberatum esse Virum sexagenarium qui per Dies Octodecem Urinae suppressionem a Copia Calculorum passus erat.* The Manner of taking it at first, was by drinking a few Drops in a little Oil of sweet Almonds, and this Method he continued so long, daily augmenting the Quantities of both the Oil and Balsam, that he had increas'd the Dose from a few Drops, to half an Ounce of the Balsam, and three Ounces of the Oil of sweet Almonds, and ten Days after he voided six Stones, and by the Help of
six

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six Drops of the Balm of *Gilead*, in half an Ounce of the Oil of sweet Almonds, taken every Morning fasting, he was preserv'd for many Years without any Symptoms molesting him. And, *Zacutus*, in the same Observation, greatly commends the Water of Tobacco in these Words. *Memini me pluries Calculos magnos, Renum Cavo tenaciter impactos Usu stillatitie Aquæ ex Nicotiana viridi extractæ, in Potum exhibita, per Urinam deturbasse.*

THE most Sage *Varendeus*, Tutor to *Riverius*, mightily extols the admirable Vertues, of the Bath Waters, in these Words, *Nullam est, me quidem judice, potentius præstantius ve Remedium, quam Potus Aquarum nostrarum Balnearum, suo enim Calore, ex bituminali Vena profecto, fundunt, liquantque quoscunque crassiores Mucos, & ipsos Calculos, si adhuc sint teneriores.* And these Effects they produce, *Quantitate mirabili qua assumuntur, unde, continues he, incredibili est Dictu, quantam, viderimus, ex calculosis istis Hominibus, saburram illarum potum cum Urinis deturbatam.* From whence it appears, that these incredible Loads of Sand and Gravel, that so frequently crouded the Urine, were not brought away by drinking two or three Quarts, or so many Gallons; but after a Quantity had been drunk, even to astonishment; or *Quantitate mirabili qua assumuntur,* as he himself expresses it. We may reasona-

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bly suppose they drunk the *Bath Waters*, a Quart a Day, and in a Years Time they might consume near a hundred Gallons; or, if they did advance to two Quarts a Day, and that no extraordinary Matter neither, and then the Quantity, round the Year, would be so much the more considerable. *Van Helmont* mightily magnifies the stupendious Vertues of *Paracelsus's Aroph*, which he calls *Aroma Philosophorum*, and is a kind of Aromatick Species, from which with Spirit of Wine, an excellent Golden Tincture is drawn, which greatly promotes the Expulsion or Dissolution of both Stone and Gravel. He relates of a certain Baron who had long labour'd under severe Pains from a Stone in the Kidnies, that was entirely cur'd by a constant Use of this Aroph. But, then let us observe the Manner he took it, First, as to frequency, he took it twice a Week, then as to length of time, he continued the Use of it eighteen Years, after which Time he became entirely well, and liv'd till he was eighty Years of Age, without any Symptoms molesting him; and when he died, and was open'd, no Signs of either Stone or Gravel appear'd in either Kidnies or Bladder.

Lib. 9. *Horatius Augenius*, in the Second Tome of
Epist. 3. his medicinal Epistles, delivers a remarkable
Dissoluti- Case of a Young Gentleman, the Son of Ja-
on of the Stone, netus

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netus, Printer to the Roman Pontiff, that was entirely freed from the Stone in the Bladder, by a Dissolution of the same, after he had, in vain, experienc'd whatever of Relief could be had from all the most eminent Physicians, both of *Venice, Naples, and at Rome*, he, at last, despairing of Success, and daily being harass'd with intolerable Pains, did submit to have it extracted by Section, and was deliver'd over to *Augenius*, the Author of this Epistle, to have his Body prepar'd for that Operation. But, the Jesuit employ'd in hearing his Confession, knowing the Disease, propos'd a Medicine of approved Virtue, which had done great Cures, both in himself and others. The miserable Patient was pleas'd to experience it, and for that Reason deferr'd the Operation, that should have been in a few Hours, some Days longer, and the ninth Day after he had taken this Medicine, he was perfectly freed from his Thralldom. I will here insert the Case as briefly as I can, in the Authors own Words. *Filium Janeti Pontificii Typographi Romæ expurgandum susceperimus, ut postea tutior ad ipsam Sectionem accederet. Tentaverat enim antea omnia Remediorum generatim, a Medicis Venetis, tum Florentinis, Prescripta. Cum vero nullam Utilitatem subsequi deprehenderit, secari cupidus, Sacerdotem jussit accedere, ut si ex Sectione moreretur, Anima fuisset consultum. Requisitus fuit ex Societate Jesu, qui audita Confessione*

ne

ne ab Egroto, & cognito Morbi Genere, proponit illi Pharmacum, ut dicebat, magni usus, de quo & in seipso, & in aliis, Periculum fecisset. Experiri placuit, neque Facti penituit. Nam qui proximè incidi debebat, liber ab omni Calculo nono Die fuit.

THE Remedy given him by the Jesuit was this following.

Rx Pul. Millepedum ʒi. ad summum Div. Aq. Vitæ ʒβ Juris Cicerum Rub. ʒx. Capt. horis, ante Prandium, quinque. So far the Jesuit.

AND, then *Horatius* proceeds to a Relation of the following Case, as an Act of his own. *Ego verò Juvenem Annorum 13 calidi & sicci Temperamenti totius Corporis curaturus: duxi imminuendam Quantitatem Aquæ Vitæ, & ubi singulis Diebus datum alteri fuit Antedotum; huic alternis dari Jussi & pro Refrigeratione totius Corporis Aq. Fabar. & Fragor. a ʒv. propinari intermedio Die cum gtt. vi. Olei de Calcantho & ʒi. Fulepi Violati.*

THE Remedy he dissolv'd the Stone with, was the following.

Rx Pulv. Asellor. pptt. ʒi. Aq. Vitæ ʒii. Decoct. Cicer. Rub. ʒviii. m. Capiat. Horis sex ante Cibum. Thus far Augenius.

BUT

BUT there is some Thing in this Case worthy of our Observation, besides a bare Relation of it. This Gentleman was Eighteen Years of Age, of a hot and dry Habit of Body, and therefore from what *Augenius* declares of the Matter, we may justly infer that he was hectically inclin'd; and for this Reason, *Horatius* was led to diminish that Quantity of the *Aq. Vitæ*, which was given to the other, with Success, for fear of overheating his Body, as also the *Pulv. Asellor.* for the same Reason, which is a plain Argument, in my Opinion, that no one Medicine, tho' never so excellent in its kind, can be managed with that Certainty in all Diseases of the same kind, but that it will require different Alterations, according to the Diversity of Symptoms, that shall oppress different Bodies, tho' all labouring under the same Disease. A farther regard he hath to the timing his Medicine: The former having taken his five Hours before Dinner, this Gentleman six, the other, every Day, this, only, every other Day. Besides, another Difference is yet observable in the Cure of these two Calculous Persons, the latter being subject to intense febrile Heats, render'd it a complicated Case; whereupon *Augenius* very discreetly prescribed him, Julep. Violet. & Ol. de Calcanth. in these Waters, not only to allay those
Symp-

Symptomatical Heats, but, as a Means to prevent them from being exasperated, when the greatest Disturbance should arise to the Body, from the Medicines imployed to dissolve the Stone. However, Success did answer both Intentions, and the Stone in both, was dissolved by the Power of these Medicines ; and to prove those Facts, no Miracles is the principal Thing I am concern'd for at present.

Tom. 2.
Cap. de
Calculo
Vesicæ.

THE last Instance I shall bring in Defence of a Dissolution, is the Case of an Old Man, that found Relief this Way. The History of this Cure you may see in *Sennertus*, where he speaks of one *William Laurembergius*, Professor of Physick at the University of *Rostoch*,
 “ Qui propecta jam Etate, Calculo Vesicæ
 “ diu affectus, ac Sectionis Auxilio periculo-
 “ sissimo sese committere nolens, de aliis
 “ Remediis cogitare cæpit.” You see he was far advanc'd in Years, and yet would try the Efficacy of Medicines. First, He assay'd to break the Stone, with that famous Remedy, in great Esteem with many Princes and Noblemen, and is a Dissolution of *Sal Tartar. ʒi. in Aq. Petrosel. ℥i.* filter'd thoro' Brown or Blotton Paper, and tinctur'd with Orange Peal, but this nothing availing him ; he proceeded to try the Jesuits Medicine, or rather, that of *Horatius Augenius*, the Form
 of

of which I have described before, with this Alteration only; that instead of the Two Scruples of Aqua Vitæ, was added the same Quantity of Spt. Juniperi. But, this, instead of relieving him, exasperated the Symptoms, to remove which, he was oblig'd to use Anodines. And, lastly, After he had taken this fifteen Days, without any manner of Benefit, he was happily cured by the following.

R^x Asellor. pptt. ℥ii. Leporis pptt. Sang. Hirc. pptt. Spong. Rosar. Sylvest. Sem. Viol. purpur ana ℥i. Specier. Lithont. ℥ii. m. f. Pulv. cujus accepit ℥ii. Decoct. Diuretic. ℥x. Spt. Juniper. ℥ii. misce.

Decoct. Diuretic.

R^x Rad. Glycer. ℥iv. Alth. Gramin. Ononid. ana ℥β Bac. Halicacubi No^o xx. Cicer. rub. ℥iv. Uvar. pas. ℥i. Sem. 4tr frigid. Major. ana ℥i. Hord. Mii. Coq. in Aq. Alkekeng. Ononid Frag. Flor. Fabar. ana ℥iβ Colaturæ adde Syr. de Alth. ℥iii. misce. ℥xi. Dos. ut supra.

THE foregoing Medicine did the Work, and the Author subjoyns his manner of taking it in these Words, " Quod Medicamentum ubi Mane Hora quinta hausisset, secundum cunda

“ cunda vice post Horas plus minus quatuor,
 “ sub Pubis Offe and Regionem ostii Veficæ
 “ Magnos sentire cæpit Dolores. Paulo post
 “ parum Urinæ profluebat, & cum ea La-
 “ mellæ exiguæ instar squamæ Piscis subru-
 “ bræ; quæ licèt aliquam visciditatem ha-
 “ bere viderentur, ad Tactum tamen in fa-
 “ bulum resolvebantur. Ita ut manifestè ap-
 “ pareret Tunicam, vel Crustam esse, a ma-
 “ jore Calculo solutam. Cujus Medicamenti
 “ Usus cum continuaret interdum quarto,
 “ nonnunquam quinto Die hujusmodi Lamel-
 “ læ crassiores, & fragmenta sæpè grandius-
 “ cula profluxerunt. Cum verò & a Calculo
 “ & ab ejus Fragmentis, Orificium Veficæ
 “ esset fauciatum, ad leniendum Dolorem
 “ Medicamentis usus est. Atque horum Medi-
 “ camentorum Usu, 17 Septimanarum Spa-
 “ tio à Calculo liberatus est.

THUS much *Sennertus*, from which we
 may observe, that this Stone was dissolv'd
 much after the same Manner it was coagula-
 ted, for a little after he had taken the Me-
 dicine for the first Time, his Pains was ex-
 tremely racking, and he made a little Urine,
 and with it small Scales or Strata's, which
 when touch'd, were resolv'd into Gravel,
 being nothing but the Rinds of the Stone re-
 solv'd, at last, after he had continued the
 Use

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Use of this Medicine every fourth or fifth Day, greater and greater Fragments and Rinds, of the Stone, came away in his Urine, which so exasperated the Pain, that he was oblig'd to use Anodynes, to keep the Symptoms under, which he did with happy Success, and in the Space of seventeen Weeks, had the Happiness to see himself entirely freed from this afflicting Malady. From this latter part of the History, we may obviate the Reason, why many times simple Remedies do great Cures, in Distempers that have resisted Medicines of the greatest Note. Here we observe the Preparation of the *Sal Tart.* of no effect in this Case, and yet certainly, a noble Medicine; and that which cur'd two before, not able to give any considerable turn in this third Case. But we must consider, that want of Success is not so often to be charg'd upon the Fault of the Medicine, as the Impatience of taking it; and, I question not, but the Dissolution of the Salt of Tartar, might contribute much towards the loosening the Texture of the Stone, and the other also of *Horatius Augenius*, and, had he continued firmly and constantly to either of them, there had been no occasion for a Change of the Medicines, but the former might have effected the dissolution of the Stone, without the latter Additions. I could pursue the Reasons still more home, and extract from
Authors

Authors of unquestionable Credit, several other Cures by a Dissolution of the Stone, but that would be only multiplying Quotations to no Purpose, and swelling this Treatise beyond its intended Bulk, since, I think, these are sufficient to maintain my first Proposition in defence of the Practice of the Ancients.

The Arguments in
Defence of
the Second
Proposition.

AND now give me leave to proceed on, in support of the second Proposition, *viz.* To examine into the Reasons, why the present Age is not so frequently attended with Success, and why so few People receive Cure in Diseases of the Stone and Gravel, considering the many Advantages of Discoveries we enjoy above the Ancients.

CERTAINLY, from the very Nature of this Proposition, from the Discoveries we have made in this Noble Art, from the Advantages we enjoy above the Ancients, upon whose Shoulders we stand; and from the Accuracy of our Pharmacy; much more of Success, in Reason, ought to be expected in our Times, and from our Practice, not only in this Disease, but all others. But then, if we consider the Ungovernableness and Untractableness of the present Age, both in Point of Diet and Physick, what avails all our Discoveries; to what Purpose is the Advantages
we

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we enjoy above the Antients, and what signifies the Splendedness of our Pharmacy.

INSTEAD of wondering why the Antients did so often succeed in the Cure of this Disease, I have much more Reason to wonder how they could ever cure one single Patient; the Methods, by which they treated them, were so preposterous, and contrary to the genuine Rules that ought to be admitted in Point of Practice. No sooner had they remov'd the Symptoms, and clear'd the first Passages, with a Vomit or Purge; but, immediately, they fell to Work with the most powerful Diureticks (no Regard being had to the State of the Blood) which rarely did fail to hurry the Humors, as a Torrent, upon the Kidnies, which, coming with greater Violence, and being secreted in larger Quantities than usual, did frequently excite Stranguries, Suppressions of Urine, and Inflammations of those Parts, by the Acridness and Sharpness of the Serous Lympha, vellicating the Nerves of the Pelvis, Ureters, and Bladder; which Consequences oblig'd them to desist from their Use, 'till they could remedy those Symptoms they were the Cause of; and, daily, perceiving that the stronger Diureticks did infer those before-nam'd Grievances, they, at Long-run, began to disesteem them, as very hurtful, if not pernicious Medicines, and ne-

The Method of Diffolution as practised by the Ancients.

ver proper in Practice, in Cafes of the Stone; especially, where a Stone was already form'd in the Bladder; and, therefore, instead of an entire Cure, (only to be expected from the Use of the most powerful Diureticks,) they terminated their Endeavours how to obtain for the Patient a Remission of his Pains, or Intermission of the Paroxisms, or, at most, a palliative Cure, and, that is no more, than a Releasement for a while. And, if any was found so Heroick in Disposition, as to dare to venture upon Section, the Hazzards they run were so extreme, that it was as uncommon a Thing for one to recover, in those Days, after the Operation, as it is now for one to die, if he have a skilful Lythotomist to perform the Work. And, I cannot but own it as my Opinion, that the little Success the Moderns have met with, in Cure of the Stone and Gravel, is very much owing to their too strictly adhering to the Method of the Antients.

INDEED the Ingenious *Frehtag*, at the Close of one of his Medicinal Epistles to *Horstius*, putting the Question, Why Success does not always attend the Event, in Diseases of the Stone and Gravel? answers, That sometimes the Stone it self, sometimes the Physician, and many Times the Patients themselves, are the grand Lets that hinder a successful Cure. And,

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And, indeed, I may not deny, but that some Stones, from the Compactedness of their Pores, being strongly combin'd by their Salts, and of large Surfaces, and that Complication of other Distempers existing in the same Body, may concur to render the best Medicines, as well as Length of Time, of no Effect. Old Age is one great Lett; and, it is the Opinion of both *Hippocrates*, and *Avenzoar*, that Quinquagenarii and Sexagenarii ought to be given over as incurable: Tho' Mr. *Constable*, a Taylor, in *Leather-Lane*, was cur'd by Section, after he was Sixty Three Years of Age; and, was cut, by that dextrous, ingenious, and most expert Lythotomist Mr. *Fern*, at *St. Thomas's* Hospital. I was present my self; and what is wonderful, he underwent the Operation without an Oh! or, so much as a wry Face; and when the Operation was over, and a Stone taken from him, larger than a Pidgeon's Egg, the Attendants about him offer'd him a Glass of Cordial, to revive his Spirits, but he told them, he was no Ways disturb'd, neither had he any Faintness upon him.

How far the Physician may be frequently in Fault, I shall not presume to determine; but, this I am sure of, he ought to be endued with an extraordinary Sagacity and penetrating Judgment, to know nicely how to distin-

guish that Variety of Symptoms attending the Stone, or else, many Times, he will be liable to dangerous Hazzards, and the Miscarriage, upon a Prescription not hitting the Disease, may prove of fatal Consequence. The Impatency of the Patient, is a Consideration, not of the least Importance, and, in all Chronick Distempers, is most commonly one great Impediment in keeping back a successful Cure; for, how is it possible to imagine, that a Physician should be able to make any considerable Alterations in a Disease, if the Patient shall refuse to submit to those Rules in the Non-naturals, that, with a well constituted Course of Physick, might gain him a happy Freedom from his Disease. He cannot expect that a Physician should cure him with a Glance, or a looking on, or, that the Feeling his Pulse, and inspecting his Urine, will remove the Evil he labours under. I am sensible, many People expect Wonders from the Operation of one single Medicine; and, unless Success immediately answer the Prescription, they are weary of taking the Medicine, and, at once, reject both the Physician, and his Remedies. We may observe the Course of the Ancient Method, quite the Reverse of this Practice; scarce a Cure, of any considerable Distemper, but what oblig'd the Patient to continue his Rules, and Medicines, a considerable Time; sometimes six Months, sometimes longer, and, many

many Times, whole Years. And, these Restraints of Nature they thought better to submit to, than to carry about them a Disease, or Infirmary, that made even Life it self a Burthen. Physicians were most happy in those Days, that had such tractable People to deal with, who thought no Regimen too difficult, no Course too long, to undergo, in restoring a good State of Health. And, I am the less surpriz'd, when I find, often, in their Works, wonderful Cures perform'd by them, that would pass for Miracles in our Age. Besides, if we suppose a Distemper interwoven with the Constitution, and rivetted, as it were, into the very Vitals; how can we think it possible to remove the Malady, without subjugating the Patient to a Course of Medicine, that, in some Measure, may equal that Length of Time it hath been a generating? From which we may expect a happy Change, and by this only Method of Proceeding, retrieve a weak, sickly, meagre, Habit of Body, to a brave, brisk, lively, active, and strong Constitution. And I do not wonder to see so many Chronick Distempers, very often accompanied with acute Symptoms, abandon'd by both Physicians and Patients, as incurable, when I perceive People, many Times, so impatient under that Regimen necessary for their Recovery.

THE Antients laid the greatest Stress upon the Non-naturals; and their Use prov'd so visibly efficacious, in the Cure of most Diseases, that some were bold to assert, that a right Regulation of 'em would cure all Distempers of the Body, without any further Assistance: And, I must, my self, own so far, that they were the best Helps, they could lay Hold of, to supply their Defect of Pharmacy, which was generally rude, and barbarous; and, most of their Medicines consisted of a Jumble, or confus'd Hodge-Potch of Ingredients, very ill put together, as may be seen in many of the antient Compositions. But, if no Consideration of present Misery have Force enough, effectually, to stave off those Irregularities, and vitious Courses, that brought on the Distemper, but still he will regale his Appetite, with Meats and Drinks, that make directly for its Increase; then, adieu to any Hopes of a Cure; for, it's equally as impossible the best Medicines should have any good Effects upon him, as 'tis possible to raise a Man already Dead. From what I have said, I think, it is very evident, that the little Success the Moderns have, in the Cure of this Disease, is owing, sometimes, to the Compactness of the Stone, other-whiles to the Ignorance of the Physician, but, most chiefly, to the Ungovernableness of the Patient.

AND

AND, now, to proceed, in Defence of the ^{The Arguments in} third and last Proposition, *viz.* To examine ^{Defence of} into the REASONS that prove, even to a De- ^{the third} monstrations, how the Stone may be dissolv'd, ^{Proposition.} without any Detriment to the Body, that is, with Safety. This is a bold Proposition, and, to illustrate clearly, may seem of no less Importance, than charging the whole Fraternity of Physicians, if not of Male-Practice, yet of Deficiency in Practice. But, I think, in the former Proposition, I have sufficiently warded against any such vile Suggestion, by fixing the not answering of Success, mostly, upon those it, deservedly, ought to rest upon, and that is, the Patients themselves.

To handle this Proposition in every Point, will extend this Section to too great a Length; and, therefore, I will only endeavour, in this Place, to support the Reasonableness of a Dissolution of the Stone; the Manner how it is to be done; the Variety of Medicines proper to be employ'd in that Operation; the Timing them. The particular Circumstances to be obviated in taking them, I shall reserve to be copiously discuss'd in the Section following the next, which shall be a Demonstration of the Reasons I have offered to make good, in Defence of a Dissolution.

Now, whether their be, in *Rerum Natura*, any Medicine so powerful, as to dissolve the Stone in the Kidnies and Bladder, is a Question that Multitudes of Authors have divided upon; many warmly defending it, many as stiffly denying it: For my own Part, I firmly believe, that a Dissolution is possible; and hopes, in the following Discourse, to clear it from all Difficulties.

IF we trace back the Stone, to its first Original, and examine, how it came first to exist in the Body, we shall find it more than probable, that it arose from a disorderly Use of some one, or perhaps more, of the Non-naturals. That their Abuse did first vitiate the Stomach; that Indigestion followed thereupon, and that, from this Fountain, crude Juices being admitted into the Blood, did corrupt those pure Streams, and caus'd a preternatural Heat, or Lensor, in the Humors, which, together with the circulating Fluids coming often to the Kidnies, did damage the Renal Glands, and over-much relax'd the Tone of those Bowels; hence a vitiated Secretion of Urine in the Kidnies, the more ponderous Atoms settling in the Pelvis or Bladder, might afford Matter for the Original Being of the Stone. Now, I say, if it came into the Body this Way, (and what other Way it should gain Admissi-
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on, I cannot conceive, unless it was Hereditary, and those Cases I must except from an entire Cure,) it will easily appear what is first to be done, in order to a successful Cure, that is, a Dissolution of the Stone, in Case it be arriv'd to any considerable Bigness; for, while it is little, no Body doubts, but that it may safely be extruded by the Sphincter Muscle of the Bladder.

THERE are two general Indications, upon which the grand Basis of a Cure will principally depend. First, How that preternatural Lentor of the Blood which dispos'd these fix'd Salts to a Union, as well as to a Generation of the Stone (for there must be a Disposition to, before there can be a Generation of a Disease) may be eradicated. Secondly, By what Means new Matter may be hinder'd from accruing to the nourishment of the Stone already form'd. Now, if this Preternatural Heat, or Lentor, or Disposition favouring the Stone, can, by any Means, be destroy'd. If the Nourishment of the Stone can be letted from increasing its Bulk. I think the most ingenious will bear me out, if, I say, I bid fair for a Cure, I mean a Dissolution.

It is a Maxim universally assented to by all Gentlemen, that understand any thing of the

the Materia Medica. That, as Nature grows stronger, the Disease grows weaker. Therefore, the grand Question, in point of Cure, is, whether it be possible to raise the Constitution of the several injur'd Parts (that chiefly suffer under the Tyranny of the Stone, which is the Kidnies and Bladder) to their primogenial State, that is, whether it be possible to give them that Freedom of Action they enjoy'd before the Stone had a Residence in the Body. Now, If the impair'd Digestions of the Viscera can be rectified, the Tone of the Renal Glands restor'd, the Sharpness of the Blood remov'd, a good Habit of Body acquir'd, and all the several Juices separated according to their natural Manner of Secretion : All which, I hope to prove very feasible to be done in the seventh Section ; I say, If Things can be brought to this pass, certainly the Assistance given from a continued Course of the most powerful Lithontriptick Medicines, will be able to disjoyn the Texture of most Stones, unless those in emaciated or consumptive Bodies, which I would advise no body to meddle with. For their further Increase in Bulk and Magnitude, being intirely hinder'd, partly by destroying that preternatural Lentor, which dispos'd the sandy Sediment to subside, and settle, and close with the Stone, and, partly, by invigorating the Constitution of both the so-
lid

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lid and fluid Masses of the several Parts; whence it follows, that the Stone it self being depriv'd of its Nourishment, must naturally grow Effete and Decay: what I mean by Effete and Decay, is, That the glutenous Lympha I took Notice of in the Fourth Section (where I speak of the Cause and Generation of the Stone, and which intimately binds the Arenulous Atoms together) being greatly impair'd, and losing its cementing Power, the arenulous Atoms become more loose, frangible, and less compact, and sometimes I have observ'd them resolv'd from a Stone into Gravel, without the Assistance scarce of any Diuretick Courses: The strength of Nature mostly concurring to a Dissolution. What I mean by the Strength of Nature, is, the Habit of the Body exalted to the highest State of Health it is capable of arriving to by the help of Medicine, or to speak of the Habits of particular Parts: The strength of the Fibres of the Bladder, concurring with the Innate, or rather natural Heat, (that I may express my self in Terms, as little ambiguous as possible) may effect a Dissolution of some soft Stones, and there are sometimes when Nature summons all her Force to expel the Enemy, and it may be of great Advantage, at such critical Junctures, to give her our best Assistance with the most generous Remedies. And, what great Things may

may we not reasonably expect from the Co-operation of Powerful Medicines, with the strong endeavours of Nature.

WE daily perceive that Drops incessantly falling upon the most hard flinty Stones, shall in time wear away their Texture: The like, also, we may observe in Ovens and Furnaces, that the acquir'd Heat of those Places, shall, in a small time, consume and crumble into Sands the hardest Stones, and make it necessary, that these Places, once in no considerable Time, be rebuilt with New Mortar; and, tho' I shall readily grant, that in the Bladder, there is no such violent Heat, as is evidently discoverable in those Places: Yet, certainly the Natural Heat of the Bladder (when not overpower'd by that preternatural Lensor) is of that Advantage to Calculous Persons, that with the Assistance of proper Diet, in Conjunction with the best Medicines, much of Success may be expected. And, it is an Observation worthy of Note, that the nearer the Center of Heat or Motion, the Stone is seated, the more frangible and less compact is its Texture, which is the Reason why those in the Kidnies are always, or at least, for the most part, more brittle and spongy than those in the Bladder. And, it is not all Stones, neither, in the Bladder, that is hardy enough to resist the
Force

Force of the Hammer ; nay, it is but a few that is indued with that Marmoreal Hardness, many I have observ'd so frangible, as not to bear Extraction, without crumbling into Pieces, which certainly indicated, that if the Patient would but have endured a little longer, the Ruggedness of that, sometimes, necessary Operation of Lithotomy, in all probability, might have been prevented. From what I have said, I hope it is manifest, that the preternatural Lensor being destroy'd, and new Matter hinder'd from joyning with the Stone, the Expulsion, or Dissolution of which, will follow of course, which leads me to demonstrate the Manner how its to be effected.





S E C T. VI.

*The Method of Cure demonstrated, in
passing off of little Stones and Gra-
vel, from Kidnies and Bladder, by
Urine.*

BUT before I proceed to the Method of Dissolution, Order requires that I first demonstrate the Manner, how Gravel and little Stones, that are capable of passing the urinary Passages, may safely be evacuated from Kidnies and Bladder, being, that those require different Management, from these that are larger, which must undergo a Dissolution, or Diminution of Parts to fit them for their Passage.

THEREFORE, after the Symptoms are all Clear, and the Patient easie, if in the Conflict the Stone or Gravel did not come away, we must consider of the most proper Ways and Means to remove it from those Parts it possesses. Indeed, we observe most People, after the first Fit is over, and they made easy, very unwilling to undergo any farther trouble;

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trouble ; for fear of disturbing the Guest, and being put to some little inconveniency of Pain; which certainly might much more safely be undergone when the Distemper is recent, and they better capable of suffering, than when length of Time, and the continual Violence of the Symptoms, shall make it dangerous to attempt an absolute Cure.

IN all Calculous Cases, great is the Care and Circumspection in the Cure, and great the Cure it self, when really perfected.

IN the beginning, if a Redundancy of Blood appear in the Vessels, I hold it not improper to begin the Cure with Phlebotomy, for, most certain it is, that nothing does so much further the Operation of Diureticks as Bleeding ; for it fuses not only the Blood it self, but the other Humors depending on it.

AFTER that Operation is over, if the Body be subject to a Costiveness, let gentle Catharticks be prescrib'd.

Rx Sal. Epsomens. ℥i. per se Capt. Mane in
Haust. Aq. Epsomens. superb. ℥ii. ejusdem.
Vel,

Rx Sen. Alexand. ℥iii. Rad. Glycer. ℥i.
Rhabar. ℥i. Sem. Fœnic. Dulc. ℥ii. Sal. Tart.
℞

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℞. Coque in Aq. Fon. ℥vi. ad ℥iii. cui adde
Syr. Ros. solut. ℥i. Man. opt. Dis. ℥i. m.

BUT, if purging Medicines prove improper, as sometimes happen, in Bodies subject to great Heats, and Nervous Disorders, in such a Case we must have Recourse to Oily Glysters, to empty the Intestines of their Contents, and keep the Body soluble and cool, relieve the Inflammation of those Parts, and make the Descent of Stones less painful. After the Body is thus guarded, and prepared, against Accidents, we may then proceed to attack the Enemy in his Intrenchments, and force him out from his strong Holds. In the Beginning it will be best to proceed very mildly, till we see whether the Stone will easily, and safely, pass, or not. Indeed, as all, or most, of the Stones, lodg'd in the Kidnies, are of a soft, spongy Nature, and their Surfaces rugged, and uneven; so, will it be morally impossible, that even little Stones, not to say Gravel, should pass, without some Uneasiness to the Patient.

THERE are three Indications only, that, in this Place, respect our Practice, in a successful Cure. *First*, To relieve the Patient in the Fits. *Secondly*, To evacuate those fabulous Concretions, the Cause of the fore-
said

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said Disorders. And, *Lastly*, to prevent their Generation anew.

THE *First* Point, that relates to the Relief of the Paroxism, I have copiously discuss'd in the Third Section, where I treat of the Cure of the Symptoms, and to which I remand the Reader.

IN the Management of the *Second*, great Care must be taken, to fortify the Mucus of the Kidnies and Bladder, against the Asperities of the Stone: Therefore, I always order the following to precede all Diuretick Courses, three or four Days, or, sometimes, a Week, as a Means to smoothe the Parts, and make the Stones slide easy.

Rx Gum. Tracaganth. ℥i. Aq. Ros. Damas. ℔i. ℥iv. Nuc. Moschat. ℥ii. Sacchar. Alb. ℥vi. m. stet in Infus. frigid. ut fiat Mucilago. Cujus capt. Cochleare i. ter in Die superb. ℔℥ seq.

Rx Aq. Malvæ ℔ii. Syr. Violar. ℥ii. misce.

AND at Night the following.

Rx Aq. Papaver. Rhead. ℥i℔. Aq. Peon. C. ℥℔. Syr. Papaver. Errat. ℥i. Ol. Amygd. Dulc. ℥vi. m. Haust. sing. Nocte fumendus.

THESE are admirable Medicines, to prevent the Stone, in its Passage, from tearing the Mucus off the Kidnies, Ureters, and Bladder. Having guarded the Mucus, I then proceed to evacuate the Cause.

R^x Pulv. Rad. Alth. ʒβ. ad ʒi. Salis Prunel. gr. xii. Croc. gr. iv. m. f. Pulv. capt. Maneque Nocte superb. Haust. seq.

R^x Syr. Alth. ʒii. Ol. Jugland. ʒvi. m. Haust. capt. in ꝑβ Cerevisiæ communis, non lupulatae quæ vulgò dicetur *Belch*, parùm calidè.

IT'S incredible to recount the Number of little Stones I have known come away, by the Use of these simple Medicines. If the common Alehouse Drink be disagreeable to the Patient, he may drink a large Draught of Chamomil Posset-Drink, or a Glass of White Wine, with a few Chamomil Flowers infus'd.

THE following was communicated to me, from a Gentleman, who assur'd me, he never knew it fail of relieving the Patient, when it was not impossible to relieve him.

R^x Pulv. Test. Ostrear. ʒβ Pulv. Flor. Chamomel. gr. x. Camphor. gr. viii. Croc. gr. vi. M. capt. Maneq; Nocte Mensibus 3. superb. seq.

R^x Seri

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R $\&$ Seri Lactis f β Syr. Alth. zii . Ol. Amygd.
Dulc. zvi . m.

AGAINST the Form of this Medicine, I objected to the Donor, when he gave it me, both as to the Quantities of the Camphire and Crocus, and also the Length of Time enjoin'd to take it. That both are, generous Medicines, in Diseases of the Kidnies, nobody needs doubt, Experience having confirm'd my Practice in the Use of them: But, then they are very hot Medicines, especially the Camphire, which, by its Subtleness, and Tenuity of Parts, is apt to heat the Brain, and raise Vapours; and, I look upon these Symptoms, to arise from the Abundance of Essential Effluvia it emits, being so volatile in its whole Substance, that, in Time, it will evaporate to nothing. And, therefore, I have thought it more adviseable, to order the preceding Medicines under the following Restrictions.

R $\&$ Test. Ostrear $\text{z}\beta$ Flor. Chamomel. gr. xv.
Croc. gr. iv. Camphor. gr. iii. m. Capt. sing.
Nocte de Die in Diem spatio Mensis, & postea
ter in Septimana, per alium Menssem integrum,
& bis in Septimana reliquo Temporis spatio,
superb. Mixt. Diuretic. seq.

Q 2

R $\&$ Aq

R \acute{e} Aq. Fabar. ℥vi. Aq. Theriacal. ℥β. Spt. Nitr. Dulc. gtt. xxx. Syr. Alth. ℥i. m. f. Mixt.

THIS will be found the best Way of giving this Medicine ; for, I am of Opinion, that no very spirituous Medicine ought to be taken, either over frequently, or in too large Quantities, for Fear of Heating the Blood.

WITH the following, I pass'd several Stones off from my Father, after he was upwards of Seventy Years of Age.

R \acute{e} Sal. Tart. ℥i. Ent. Veneris ℥β. Aq. Juniper. ℥iii. Pill. Math. gr. vi. Aq. Fabar. ℥iβ. Syr. Papav. Errat. Ol. Amygd. Dulc. ana ℥β. m. f. Haust. sing. Nocte sumendus. Mane seq. capt Coch. iii. Elixir. nost. descrip. in Sect. 2. Part. II.

THESE Medicines he continued Spring and Fall, for a Month, with some Intervals ; and had, from their Assistance, great Relief.

Mr. *Crubin*, formerly Steward to my Lord *Colepepper*, assur'd me, that, from the Use of the following Powder, he had voided above a Dozen Stones.

R \acute{e} Baccar.

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R \acute{c} Baccar. Sennel. \mathfrak{z} ii. Sal. Nitr. \mathfrak{D} iv. Milleped. pptt. \mathfrak{z} i. Nuc. Mosc. $\mathfrak{z}\beta$. m. in Chart. x. divid.

NOT to trouble the Reader with Numbers of Prescriptions, take the following, as efficacious a Medicine, in all Cases of Gravel and Stone, as can be prescrib'd.

R \acute{c} Cin. Fol. Vitis ust. Milleped. ppt. ana \mathfrak{z} i. Salis Volat. Succin. \mathfrak{D} ii. Croc. Pulv. $\mathfrak{z}\beta$. Pulv. Chamomel. \mathfrak{D} i. Camphor. $\mathfrak{D}\beta$. m. Pulv. Dos. $\mathfrak{D}\beta$ in Hauſt. Vin. Alb. Mont. ſing. Mane.

Laſtly, AFTER we have ſufficiently evacuated from the Kidnies and Bladder, all little Stones, and ſabulous Concretions; it will be moſt proper, to prevent the Generation and ſettling of more, that the Patient wind up the Cure with a Courſe of the Mineral Waters, among which the Chalybeat claim the Preheminence. If the Patient conſult his Conveniency, and his Buſineſs will not permit him to be far from *London*, the *Iſlington* Waters, eſpecially, thoſe at *New-River Head*, call'd *New-Tunbridge Wells*, will be beſt for his Uſe. They, beſides the Steel they are very much impregnated with, contain a bituminous Asphaltum, which renders them very Balfamick, and healing, in all Ulcers of the

Q 3

Lungs,

Lungs, Stomach, Kidnies, and Bladder. They resolve all Tartarous Slime, that afford Matter for the Generation of the Stone and Gravel; and, purge off, by Urine, those hard scorbutick Salts which adhere to the Extremities of the Vessels, and crowd the Body with Obstructions: They greatly restore, in all inward Decays and Weaknesses, from what Cause soever. I drank them my self the last Summer, and, must own, I received great Benefit from their Use.

GENTLE Riding is also of singular Benefit, in most Diseases of the Kidnies and Bladder, especially, if the Constitution can endure it. And, for the Patient's Diet, I would advise Milk, as Aliment of good Nourishment, and very efficacious in restoring the impair'd Digestions; besides, it is an Anodine, and, from its sulphurous Particles, it proves very softening, and lubricating, to all the Passages. I should prefer it crude, as it comes from the Cow, before all other Ways of Preparation: For, new Milk relaxes, and keeps the Body soluble, which is of great Consequence, in a Disease where such Damages ensue upon the Body's being Costive, which most are subject to, that labour under either Stone or Gravel; and, therefore, will it be highly necessary, as often as Occasion requires, to guard against this Inconveniency, by gentle Catharticks of
Cassia

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Cassia, Manna, or Lenitive Electuary, made up with a little Cream of Tartar.

AND to compleat the Cure, I would advise a discreet Use of the *Cold Bath*, a Remedy second to none, by way of Prevention. For, as both Stone and Gravel do owe their Original Being, from an overlax'd Tone in the Kidnies or Bladder; so, those Remedies that act by braceing the Nerves of the aforesaid Bowels, and restoring the lost or impair'd Tone, to their due Tensity again, must be confess'd to have a very great Influence in the Cure of this Disease. Therefore, let the Patient observe, in the Use of this Exercise, suddenly to plunge in over Head; and to hasten out, as soon as he rises with his Head above Water again; for, it is the first Shocks that give the greatest Contraction to the Vessels; and, by shortening our Stay in the Water, we, in a great Measure, prevent it from impressing any of its relaxing Properties upon the Body. But, tho' this is as general, and extensive a Remedy, as any Extent in Physick, yet, is it not without its particular Exceptions, and may not only be used to the Detriment, and Damage, of the Body, but also to the Hurt of those labouring under this Disease. For, it is never proper to be us'd by any extraordinary lean, emaciated Bodies, nor those extreme corpulent. For, to the first it

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gives too great a Fusion to the Blood, which is, it may be, already too much impoverished; and, the latter it endangers, by a too quick Rarefaction of the Humors, upon a sudden Plunge; whereby the Blood, equally recoiling to the Heart and Breast, in greater Quantities than these Parts can well receive, threatens a Suffocation. But, it may prove of fatal Consequence to those, who labour under any unsound Bowels, or, are subject to a large confirm'd Stone in the Bladder: Such must absolutely refrain it.

INDEED, those, whose Blood and Spirits are so very curious, as not to be able to bear a Course of Diureticks, without manifest Disorders, can least of all expect an entire Cure. In such a Case, I would recommend the following Water, as the best Means to palliate the Infirmary. It is that most excellent Water of *Paulus de Sorbait*, a Remedy ever in great Esteem with the Author. And, the Benefit I owe to Mankind, obliges me to transcribe it from the Author into English, it being so safe and innocent, as not possible to disagree with any Constitution. You may see it in the 70th Chapter of the Works of the aforesaid Author.

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The Nephritick Water of Paulus de Sorbait.

TAKE of large Pippins, Oranges, and Limons, the most juicy, of each a Dozen, of Casia, newly extracted, a Pound and an half, peel the Apples, slice the Oranges and Limons with their Rinds, and beat all together in a Marble Mortar, with their Seeds and Pulps; after which mix the Casia with them; then, put all together, in a large Earthen Vessel, and pour upon them six Pints of Goats Milk Whey. Let all digest 24 Hours, then distil, the Author saith, in a Glass Still, but, I think, upon Defect of that, a cold Still, with a moderate Heat, may do near as well. After Distillation, sweeten it with double refin'd Sugar, and reserve it for Use.

THE Author sets it off with great Encomiums, calling it that most precious Water he ever esteem'd as a Secret, and, with which, he had done such signal Cures. These are his own Words, " Hæc est illa Aqua pretiosissima hæc
" ma hæcenus à me pro Arcano habita, nunc
" verò, ex Charitatis Liberalitate effusa, &
" Proximi Bono dicata, cui non est similis :
" Hæc siquidem temperatissima est, nec uti
" reliquæ Renum Intemperiem auget, aut Al-
" vum astringit, sed eam tenet apertam, &
" paulatim omnem Arenarum Saburram ever-
" rit,

“rit, Vimque Lapidificam & Intemperiem
“tollit.” Thus he: And, indeed, what he
saith is worthy our Consideration; for, it does
not, as many others recommended with spe-
cious Titles, heat or inflame the Kidnies, if
us’d either in too great Quantities, or per-
sisted in for any considerable Time; but, gently
relaxes the Body, and cools by its Temperate-
ness. And, tho it may be objected, That the
purging Quality of the Casia will be destroy’d,
since it can never ascend in Distillation, espe-
cially, by such a moderate Heat as is here re-
commended; yet, I dare affirm, that who-
ever shall be pleas’d to experience the Usefulness
of it, in either Stone or Gravel, shall,
always, find his Body inclinable to a Laxness;
and, these Effects it produces, by Vertue of
its Smoothness, and Agreeableness to the Na-
ture and Constitution of all Bodies I have ever
yet had Occasion to order it for. Nor, did
I ever once prescribe it, but with the great-
est Advantage, and Success to the Patient.
Those, who find it too cold for their Consti-
tutions, may add a little Wine. Four Ounces
to six or eight of it, may be drunk every
Morning and Evening.

I SHALL now close this Section, with a
Relation of two or three Cases I absolutely
cured of the Stone, as a Confirmation of the
Reasons I have offer’d to make good.

CASE

C A S E I.

Mr. *Berisford*, Stationer, in *Mark-lane*, on June 17, 1719, being grievously afflicted with an intolerable fix'd Pain about the Region of his Loins, and in the Sixtieth Year of his Age, desir'd my Assistance. I came, and perceiving him very much disorder'd with the Violence of his Pain, had little to doubt, but that it was a confirm'd Stone in the Kidney. His Body was more inclin'd to the Right Side, from a Convulsion of the affected Ureter. His Urine was pale, thin, and watry, and but little at Times. He attempted several Times to vomit, and, did once or twice bring up a little poracious, green Bile. His Body was subject to be costive, and, he had a Fever, but it was only of the Symptomatical Kind, proceeding from the Violence of the preceding Symptoms.

Explanation of the Case.

NOTHING is more evident, than that the preceding Symptoms arose from the Stone in the right Kidney ; for, at first, I was given to understand, that the Pain, two or three Days before I came to him, had been dull and heavy ; and, feel'd, as he thought, weighty upon his Loins, but, now, was become more severe,

vere, and raging, and was descended a little lower; which plainly indicated, that it was fallen into the Head of the Ureter, which, being more Nervous, very often suffers more sensible Affections from the unequal Surfaces of those little Bodies. For, when several Corpuscles are join'd, or link'd together, and form one Stone, if it be larger than can well pass the Ureter, it creates deadly cutting Pains, and, many Times total Suppressions of Urine, which, at last, came to be our Case.

Cure of the Symptoms.

My chief Concern under these, then present, Circumstances, was, to consider Two Things: *First*, Whether I ought to attempt, by Revulsion, to bring back the Stone again into the Cavity of the Kidney: Or, *Secondly*, I should take the Advantage of this Motion, and help Nature in expelling, or impelling, it forwards into the Bladder. I endeavour'd to lay all the Dangers, and Advantages, both Ways, before me; and, after I had examined the Reasons on both Sides, I came to the following Resolution: That it was most for his Advantage, to have it driven by the Ureter into the Bladder. First, I consider'd, that no Medicines could perform the other Intention, unless Vomits, which were very improper for him that was under Torture; then, again,

again, if I should have advised him to a Vomit, in the Intervals of his Pain, and it succeeded accordingly ; yet, nothing was done for the Relief of the Patient. The State of the Disease was still the same ; but, put the Case, Success did not answer, then it was but harrassing the Patient to no Purpose. As to the Descent of the Stone into the Bladder ; the great Danger was, lest it should stick by the Way, and not descend further ; or, if it did descend into the Bladder, whether it might not, in its Passage, so tear the Ureter, as to cause an incurable Ulcer, and continual rack-ing Pains, from the Urine continually dribbling down the affected Part.

HIS Age being past the Time limited by *Hippocrates*, for an absolute Cure, caus'd me very much to Doubt, whether I should be able to succeed in my Attempt : But, when I consider'd the Distention the Ureters were capable of, and, doubtless, would give Way to, rather than suffer a Laceration, the Main of the former Objection easily vanish'd ; and, being very well acquainted with his regular Manner of Life, and, knowing him to be of a robust Habit of Body, I had little to fear, but that his Strength would be able to support him in the Conflict.

HAVING

HAVING well weigh'd the Evidence of Danger that seem'd to threaten either Way, and observing Nature to declare for the Bladder, I resolv'd to give my best Assistance that Way, and to obviate, as much as possible, those Symptoms, and other Accidents, that threaten'd to press upon these Parts, thoro' which it was to pass. And, because of his Costiveness I order'd the following Glisten.

R^c Decoct. Com. pro Enemat. ℥xii. Ol. Lin. Com. ℥iv. Elect. Lenitiv. ℥i℥ de Bac. Lauri ℥i. m. f. Enema injiciendum quamprimum. But his Body no ways answering from this Enema, and his Pain raging, I came into the following Measures.

FIAT Vænesectio in Brachio & detrahatur Sang. ℥viii.

R^c Man. opt. ℥i. f. Dissol. in Aq. Cerasor. Nig. ℥ili. cui adde Pillul. Stark. Gr. xm. Aq. Peon. C. Ol. Amigd. Dulc. ana ℥vi Syr Dialth. ℥℥ m. f. Haust. quamprimum sumendus.

R^c Fol. Malvæ. Hædr. Terrestr. ana Mi. Rad. Alth. Concis. ℥i. Uvar. Passul. ℥i. Rad. Glycer ℥℥ Sem. Fænic. Dulc. Coriand. ana ℥ii. Coq. in Aq. Font. ℥liii. ad ℥lii. Col.

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R \acute{x} Amig. Dulc. Decort. \mathfrak{z} iß Sem. Papaver.
Alb. \mathfrak{z} i. Contund. quam optime in Mortar.
Mar. sensim affund. Decoct. suprapr. \mathfrak{f} iß cui
adde Aq. Theriac. \mathfrak{z} vi. Syr. Viol. Alth. ana \mathfrak{z} ii.
Spt. Nit. Dulc. \mathfrak{z} i. M. Emulsio Capt. Hauft.
frequenter.

THESE Medicines mightily relieved his
Pain, and caused the Stone to move a little
downwards: To facilitate which Motion, I
order'd the following Fomentation and Li-
niment.

R \acute{x} Fol. Malvæ Flor. Camomel. Bac. Junip.
Lauri ana Mi. fol. Mercur. Flor. Sambuc. ana
Mi. Coq. in Aq. Font. \mathfrak{f} iv. ad \mathfrak{f} ii. f. Fomen-
tatio & cum calidis (non fervidis) Stupis
foveatur pars dolens.

R \acute{x} Unguent. Dialth. \mathfrak{z} ii. Ol. Scorp. Lilior.
Alb. ana \mathfrak{z} i. Adip. Anser. Ol. Camphor. ana \mathfrak{z} ß
m. Linamentum post Usus Fomentationis
utendum.

HIS Spirits growing faint, thoro' the Ex-
cessiveness of his Angor, I order'd the follow-
ing,

R \acute{x} Aq. Peon. Compt. Aq. Cerasor. Nig. ana
 \mathfrak{f} ß Tinct. Croc. Vin. Canarin. Fact. \mathfrak{z} ii. Syr.
Bals. \mathfrak{z} i. m. Julep. Capt. Coch. iii. 2da quaque
Hora in Languoribus.

June

June 18. 1719.

REPT. Haust. Aperiens cum Man. heri
præscript. hora 11^{ma} hujus Diei sumendus.

REPT. Emulsio ut ante.

AFTER he had taken this latter Draught about two Hours, he had three Stools, which greatly reliev'd him; and in the Afternoon, he voided much Gravel, the Stone continuing to move more downwards; which to help forwards, I commanded the Application of warm Stupes, and the Linement; with the use of which, about two a Clock the next Morning the Stone drop'd into the Bladder; upon the fall of which, an immediate Erection of the Penis ensu'd, and a flabing of the Urine, which spouted from the Glands, like Water from a Squirt.

UPON the Descent of the Stone into the Bladder, all the Symptoms grew milder, only some little Quantities of bloody Urine follow'd, which confirm'd me, that the Ureter where the Stone stuck had suffer'd a slight Laceration, tho' no Pus, or at most, nothing to speak of was excern'd. Yet, I thought good to order the following, to guard those Parts that had suffer'd from farther Damages.

R. Aq.

R \acute{e} Aq. Hord. ℥ii. dissolv. Gum. Arabic. ℥i℥
cui adde Aq. Theriac. ℥ii. Syr. Balsam. ℥i℥
Spt. Nit. Dul. ℥i℥ m. bibat copiose ad libitum.

R \acute{e} Ol. Lin. S. Igne ext. ℥i℥ Syr. Papaver.
errat. ℥i. Balf. Gilead. gt. vi. m. f. Haust. sing.
Noctibus sumendus.

THE Use of these Medicines in a Weeks
time made him entirely easy, so that he was
free from all manner of Complaints.

Cure of the Stone.

BUT it is not enough that we ease the Pati-
ent in the Extremity of his Pains, and remove
the Fits, but we must go further, and Cure
the Disease.

THEREFORE as soon as the Symptoms
were off him, he was very desirous of either
having the Stone expell'd the Body, or dis-
solv'd. But, I doubting whether it was pos-
sible to effect that Operation, more because
of his Age, than of the possibility of the
Thing, several times dissuaded him from at-
tempting it. But, he persisting in his Reso-
lutions to have it expell'd the Body, wisely
judging, that if it continued there, he must
expect to undergo the same Violence again,
R and

and perhaps often, I was at last prevail'd upon to afford him my best Assistance. I began with the following.

R^x Casiæ noviter extract. ℥iβ Cream. Tart. ℥β Calomel. ℥ii. Rezin. Jalap. ℥i. Syr. Violar. q. s. Ol. Saf. gtt. iii. m. Elect. Capt. q. Nuc. Mosc. Major. Mane bis in septimana superb. Haust. Seri Lactis.

THE intermediate Days he did not Purge, I order'd him the following,

R^x Coral. Rub. pptt. Oc. Canc. pptt. Marg. pptt. ana ℥i. Croc. Pulv. ℥i. Salis Suc. ℥β m. Pulv. in Chart. 6. divid. Capt. i. Maneq. Nocte a purgatione vacuo superb. ℥β Apozem. sequent.

R^x Sarf. ℥vi. Chin. Nod. ℥iv. Rad. Glycer. ℥ii. Sal. Tart. ℥β Coq. in Aq. Font. ℥viii. ad ℥iv. Col.

THESE Medicines he continued near a Month. The Design of them being only to remove the Acidities of his Blood, and make way for stronger Diureticks.

Indeed, While he was taking them, he could often perceive the Stone to juttle against the Neck of his Bladder, which gave him
some

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some Uneasiness: so, after I had consider'd his Age and Constitution, I pitch'd upon the following as the most sutable to dissolve or expel the Stone.

R^x Sal. Tart. Borac. Venit. Milleped. pptt:
ana ꝑ Croc. Pulv. Sal. Vol. Suc. ana gr. vi. m:
Pulv. omni Manè Hora 6ta Matutina sumen-
dus superb. Cochlear. 3a. Mixt. seq.

R^x Vin. Alb. Mont. lbi. Spt. Nit. Dulc. ʒii:
Syr. Cond. Nuc. Mosc. ʒi. m. Mixtur.

Every Night, while he continued the Use of the above prescrib'd Medicines, he took the following Draught, as a means to compose the Spirits.

R^x Aq. Saxifrag. Cerasor. Nig. ana ʒi. Aq.
Peon. C. Theriac. ana ʒiii. Syr. de Mecon. ʒi:
m. f. Haust. Hor. somn. cujusque Noctis su-
mendus.

He took these Medicines, as I directed, every Morning and Night, and was perswaded that the Stone would either come away whole, or be dissolv'd by the Force of these Remedies; nor was he frustrated of his Expectation, for on the seventh Day about one in the Morning, as he lay in Bed, he perceived the Stone to bolt in-

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to the Neck of his Bladder, which coming in to the Urethra, he forced along that Pipe, till it made its Exit into the Urinal, which was not effected without much Pain.

THE Stone when I came to view it, was near as big as a Filberd. I order'd him to drink the Spaw Waters a while, to clear the Passages, and so left him very well satisfied; and to the Day of his Death he never complain'd of any *Uneasiness* about those Parts, but what was common to People of his Years. The Truth of this Case, and exactness of the Relation, may be fully known of Mr. *Norris*, in *St. Paul's Church-Yard*, who has seen the Stone. I have been the more exact in the Relation of this Case because of his Age.

The Case of Mr. John Thompson, of Kendal in Westmoreland.

May 17. 1716. While my Residence was at *Penreth*, my Occasions call'd me over to *Kendal*, a Chief Town in *Westmoreland*, where by Accident, I was desir'd to attend this Person, who, for several Years, had suffer'd grievous Symptomattick Tortures from the Stone in the Bladder. I came to him in the Parox-ism, when the Symptoms severely press'd him.

HIS

HIS greatest Complaint was, of a rack-
ing Pain near the *Os Pubis*, which sometimes
would press him very much upon the *Pyrina-*
um; he had frequent Inclinations to Urine,
but could make it only in Drops, or very lit-
tle Quantities, and that with much Striving,
and Straining, which was attended with
great Pain and Heat, most sensible about the
end of the Glands. Many little Stones, and
much Gravel had been voided by him for-
merly, and he let me see several he had pre-
serv'd in a little Box he kept for that Purpose.

Explanation of the Case.

FROM the preceding Symptoms, it plain-
ly appears, his Case was no less than a Stone
in the Bladder. Of what Bigness, was not
so easy to be determin'd. His voiding Gra-
vel and small Stones, argued his Constitution
inclinable to that Distemper, and the Ex-
tremes of Winter and Summer exasperating
the Symptoms, was no small Proof of his
Calculous Disposition; besides, his Bladder
was certain to suffer very great Inconvenien-
cies from his eating or drinking any disagree-
able Food, which could not ordinarily hap-
pen, if the Tone of that Viscus had not been
impair'd from some Accident or other.

Cure of the Symptoms.

I BENT all my Endeavours, if possible, to assuage that violent Torture he labour'd under. To relieve which, I order'd the following,

R̄ Decoct. Flor. Chamomel. ℥xii. Terebinth. Venit. in vitell. Ovi. dissolut. ℥i. Ol. Lin. Com. Mel. Violar. ana ℥ii. Elect. Lenit. ℥i. m. Enema quamprimum injiciendum.

R̄ Pillul. Math. ℥i. Spt. Junip. ℥ii. cui adde Mannæ Opt. Dissolut. (in Aq. Cerafor. Nig. ℥iii.) ℥x. Ol. Amig. Dulc. ℥vi. m. Haust. statim sumendus sæviante Dolore.

May, 18. 1716.

HIS Pain being excessively dolorous, about the Os Pubis, I order'd the following Fomentation and Liniment.

R̄ Flor. Chamomel. Sambuc. Melilot. ana Mi. Coq. in Aq. Font. ℥iv. ad ℥ii. Col.

R̄ Ol. Amigd. Dulc. Ungt. Dialth. ana ℥ii. Ol. Lilior. Chamomel. ana ℥i. Ol. Champhor. ℥vi. Philosophor. ℥iii. m. f. Liniment. Parti affectæ applicandum post usum Foment. Rep. Haust. purg. heri præscript. addendo Man. Opt. Dis. ℥β.

May,

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May 19. 1716.

HIS Pulse beat high, so that I thought it very advisable he should lose ʒx. of Blood from the Arm, which accordingly was done, and prov'd of great Service to him.

R̄ Aq. Lact. ʒiii. Peon. C. ʒi. Syr. Papaver. errat. ʒi. Pillul. Math. gr. xm. m. f. Haust. Hora somni sumendus.

May 20. 1716.

HE had a very good Night, and rested well, but his Body being inclinable to a Constiveness, I order'd the Glisters to be repeated.

May 21. 1716.

HE was very easy, in every Respect, and could walk about his Business, but could often perceive the Stone to jostle against the Neck of his Bladder, both as he sat down, or endeavour'd to stoop; and, therefore, he desir'd me, if it were possible, I would pass it from him.

Cure of the Stone.

HAVING got the Symptoms clear off him, I consider'd his Body was strong, and able to un-

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dergo a Course of Physick. Therefore, after I had order'd him a Vomit and purg'd him two or three Times, to cleanse the first Passages, I prescrib'd him the following for a Month.

R \acute{e} Test. Ostr. pptt. \mathfrak{z} i. Sal. Prunel. gr. vi
Croc. Pulv. gr. iv. Ol. Nuc. Mosch. gtt. i. m.
f. Pulv. Maneque Nocte sumendus, superb.
℞β Decoct. Dietetic. seq.

R \acute{e} Sarf. \mathfrak{z} vi. Chin. Nod. \mathfrak{z} iii. Rad. Glycer.
 \mathfrak{z} i. Sem. Fænic. Dulc. \mathfrak{z} vi. coq. in Aq. Font.
℞viii ad ℞iv. col.

A costive Body being an inseparable Companion to calculous Persons, I order'd an Ounce of Manna to be dissolv'd in a little Watergruel, twice a Week, which greatly reliev'd him: During the Time he took these Medicines, he excern'd much Gravel and Sand; but, the grand Disturber of his Peace was still behind; The Stone that had so often tortur'd him, was not yet come away. He could often perceive it juttle against the Neck of the Bladder, and, very often, it would cause him to suppress his Urine, in the Height of making it.

AFTER I had carefully consider'd the Symptoms, the Weight and Pressure of the Stone, and the Disturbance it had given him; I fear'd
it

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it might be much larger, than what could well pass the *Urethra*; and, therefore, it would be absolutely necessary to employ the strongest Dissolvents, if possible, to force it to Pieces, and so, by Degrees to pass it off with the Urine. To effect which I order'd the following.

Rx Sal. Tartar. ʒi. Aq. Petros. ʒiii. Tinct. Croc. ʒiii. Syr. e Cort. Cit. Alth. ana ʒiii. m. f. Haust. singulo Mane sumendus.

HE had not taken this Draught three Mornings, 'till a Strangury seiz'd him: To remedy which, I order'd him 40 Drops of my Tinct. Lythontriptic. in a Glass of Mountain Wine, every Night, which made all Quiet; and, he continued these Medicines a considerable Time, much Gravel being excern'd daily, and his Urine, at last, began to grow muddy, and some *Uneasiness* ensued thereupon; but, nothing disturb'd him to purpose till June 26; at which Time he perceiv'd a racking Pain about the Neck of his Bladder: A little after, bloody Urine flow'd in small Quantities, with some small Particles of Gravel: In about a Quarter of an Hour the Pain became more severe, and the Stone was got into the *Urethra*, which put him to exquisite Torture. Not able to bear longer, he sent for me; and, observing his Disorder, I forthwith

with order'd the strongest Narcotick I durst venture to give him. Understanding the Stone was got into the *Urethra*, I fomented the *Penis* with a warm Liniment, and, with my Finger and Thumb, I guided it along, 'till it made its Exit.

WHEN I came to examine it, I found it considerably larger than a Horse-Bean: I order'd him two or three Anodine Balsamick Draughts, and to go on with a Milk-Diet, and afterwards to drink the Mineral-Waters; and so dismiss'd him, as well as he ever was in his Life.



S E C T.



S E C T. VII.

*The Method of Cure demonstrated, by
a Dissolution of the Stone.*

WE come now to that most difficult Point that has perplex'd the Ingenious of all Ages, and which hitherto has been call'd the Reproach of Physicians, *viz.* To demonstrate the Grounds upon which (in the Fifth Section) we argued the Dissolution of the Stone to result from.

N o w, after we have got the Body clear of the Symptoms, the Orgasm of the Blood entirely quiet, and the Patient free from all Pain; the next Point that comes under our Consideration to deliberate upon, is, What further Relief can be given, that is, whether the Stone, which gave Disturbance to the miserable, and, if suffer'd to continue, will, doubtless, excite the same Tragedy again, and again, may be dissolv'd, resolv'd, or ex-cern'd. I think we have demonstrated, in the former Section, by unanswerable Reasons, grounded upon Matters of Fact; That Gravel and Stones, while they continue so little,

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as to pass the Urinary Passages, may without any Damage, be expell'd the Body. The great Question then is, whether Stones arriv'd to a greater Bigness may safely be meddl'd with by Pharmacy. In my Judgment, they most certainly ought and may. And, I think, what I have urg'd in the latter part of the Fifth Section, in Defence of a Dissolution, proves its possibility, beyond dispute.

Nor that I believe it possible to resolve all Stones, The noble Art of Physick does not oblige to Impossibilities, and 'tis no Reflection to the Profession, that sometimes a Disease may happen, not only to elude the Advice of the most Able Physician, but also the Effects of the most generous Medicines. Could Physicians cure the Diseases of all Sexes, Times, and Ages, they would then be Gods on Earth, and have the Power of Life and Death in their Disposal, which to contend for, would be an Affront upon the High and Mightiness of Heaven, and little less than bordering upon Blasphemy.

IN the latter Part of the Fifth Section, I argued the Certainty of a Dissolution to result from two grand Topicks. First, From the Possibility of destroying that præternatural Lensor in the Blood and Juices: And, Secondly, From being able to hinder new Matter

Matter to accrue to the Stone. Now, The Question that only remains undetermin'd in this Point, is, Whether, in Bodies where there is a Stone absolutely form'd, these two Intentions of Cure can be effected. That is, Whether the Fits of the Stone, frequently racking the Patient, will not be apt to frustrate the Operation of the best Medicines.

IN Answer to which, We are to consider, that no Stone in the Bladder can excite Pain, unless it be put in Motion; and no Stone in those Parts can be put in Motion, unless something be eat or drank that is disagreeable to the Bladder; therefore, no Pain will trouble the Patient while he is regular in his Diet, and orderly in the rest of the Non-naturals, therefore, the Medicines, if they be fitting for his Case, may effect all that is requisite to the restoring his Constitution, without giving any Disturbance to those Parts. Therefore, no Reasons can be fairly objected, why all the Intentions of Cure may not safely be effected, if due Regard be had to the particular Indications following,

First, To take great Care to regulate the Non-naturals.

Secondly, To Restore and Strengthen the impaired Digestions.

Third-

Thirdly, To alter the Dyscrasie of the Blood, and other Juices.

AND, *Lastly*, Having invigorated the whole Constitution of the Animal Oeconomy, to prosecute a Dissolution of the Stone, by a continual Course of the most powerful Lithontriptick Diureticks.

IN the first place, we must examine into the Age, Temperature, and Constitution of the Patient, which are of very great Consequence in point of Cure. Old Age, will, but with great Difficulty admit of a Cure; and, *Hippocrates*, somewhere in his *Epidemion*, saith, that he never saw any Person labouring under Diseases of the Bladder, cured after the fiftieth Year.

THE Temperature of the Body, and Constitution also, ought well to be regarded, and the Non-naturals so dispos'd, as may be most agreeable to both. And here, let me advise the Physician, not to be over strict in the Rules of Diet. We live in an unhappy Age, and have Persons to deal with, that will submit to no manner of Rules scarce, that quadrate not with their Humor. Indeed, I have been very prolix upon the Subject of the Non-naturals in the Seventh Section of the former,

former, and second of this latter Part, to which I refer you, and therefore, shall not further enlarge in this Place.

THINGS thus dispos'd; Upon mature Deliberation, if it appear that the Habit of Body is strong enough to bear a Course of Physick in order to a Dissolution of the Stone; The next Question is, with what Remedies we ought to begin, and, if a Suprabadundance of Blood appear in the Vessels, I cannot disapprove of Phlebotomy; especially, if the Habit of the Body be strong, and the beating of the Pulse will bear it. But, if the Constitution be impair'd by the Violence of many Paroxysms, and the Blood and Spirits be both poor and weak, it will be better to prætermitt that Operation, and pass on to examine in what order the several Digestions may be. Whether the Stomach performs its Office of Digestion well. Whether Sicknes does not affect the Patient after Meals, how he sleeps, and whether he be not subject to acid Eructations, and windy Belchings after Dinner. If I find any Disorders to attend the Stomach or Bowels, I would then advise to begin with a gentle Vomit; and to repeat it every other Day, so long, till not only that *Saburra* of Humours impacted in the *Plicæ* and Folds of the Stomach is evacuated, but also, until the lost or impair'd Tone of the foresaid Bowel is restor'd. It

It is a vulgar Error in most People to impute the Cause of Indigestion to the Depravedness of the Juices in the Stomach ; when in truth, these deprav'd Juices are rather the Effect ; for the Tone of the Stomach being weaken'd by a disorderly use of the Non-naturals, the Elastick Fibers of this Bowel cannot contract themselves with that Vigor necessary for the Expulsion of the pituitous Humor, it receives from the Blood, and which ought to be digested again, and sent into the Blood a new for a farther Elaboration ; and I very much question whether, a great part of the Food, we consume upon the Body, for its support, does not pass twice thro' the Stomach before it be thoroly digested into the Nourishment of the several Parts.

As to the Election of Vomits, I would only recommend to practice, the most mild and gentle, such as the Rad. Ipecacuan. Oximel Scil. Sal Vitrioli and if the Constitution require more powerful Evacuations, the Tartar. Emetic. will answer the strongest Indication. And abandon the Use of all Mineral Vomits, especially in Substance, in this Disease, for by the Violence of their Operation, they, instead of restoring, impair the Digestions, and very often only serve to make the Breach wider.

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HAVING rectified a bad Digestion; I then proceed to evacuate the first Passages by proper Catharticks, 'till I have brought the Body to answer by Stool once a Day.

Rx Fol. Sennæ ℥ii. Rhei. incif. ℥i. Rad. Glycer. ℥iſſ Sal. Tart. ℥i. Coq. in Aq. Epsomēſ. ℥ſſ ad. ℥iv. Col. cui adde Syr. Roſ. ſolut. Man. opt. diſſolut. ana ℥vi. m. f. Hauſt. ſummo Mane ſumendus cum Regimine. Vel,

Rx Caſiæ noviter. Extract ℥i. per ſe Capt. bis in Septimana per Menſem. Vel,

Rx Caſiæ noviter Extract. ℥i. Calomel. ℥i. m. Bol. Vel,

Rx Elect. Lenit. ℥vi. Crem. Tart. ℥ii. Rez. Jalap. gr. iv. Ol. Nuc. Moſch. gtt. ii. m. f. Bol.

To Hippocondriack People, or thoſe ſubject to the Spleen, I commonly preſcribe the following,

Rx Tinct. Sac. ℥iſſ vel ii. Syr. de Spin. Cerv. ℥vi. Aq. Peon. Compt. ℥iii. m. f. Hauſt. Capt. Hor. ſom. ſingulo Nocte.

THIS Medicine will bricken the Blood and Spirits, and its obſervable, that Sweat Medicines, whether purging or alterative,
S rarely

rarely do agree with Persons subject to Vapours, and over cooling Medicines are pernicious in Bodies where there is a Relaxation of the Nerves. Indeed, so nice and curious are the Bloods and Spirits of some People that manifest Disorders, shall arise from the Operation of the most gentle Emeticks, or Catharticks, and this, more especially, in Bodies subject to nervous Disorders. In such a Case, we are in bad Circumstances for a Cure, and the only Relief to be expected from Evacuation, must be had from Glisters, frequently repeated, during the Course of other Medicines.

THUS far having proceeded; I then go on to examine into the State of the Blood, and very often do advise the losing eight or ten Ounces, more, that I may see the Nature and Consistence of this Fluid, than any real Benefit I expect from such an Evacuation. If the Blood appear thin and poor, there most commonly attends Rheumatick Pains, for all thin, fus'd Blood makes sharp Blood. To remedy which Inconveniency, it will be highly proper the Patient go on with a Diurnal Course of the testacious Pouders, according to some of the following Forms.

Rx Marg. pptt. Test. Ostr. pptt. Oc. Canc.
pptt. ana ʒii. Pulv. Viperar. ʒi. Spec. Diamb.
f. od.

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f. od. ℥ii. Croc. Pulv. ʒβ m. Pulv. in Chart.
viii. Divid. Capt. 1. Omni Mane & Nocte
de Die in Diem, Mense integro, Superb. Hauſt.
Sequentis Julepi.

R̄ Aq. Saxifrag. Ceraſor. Nig. ana ʒiv. Aq.
Nephritic. ʒiii. Marg. pptt. ʒiβ Sachar. Al-
biſſimi ʒiii. Spt. Nitri Dulc. ʒi. miſce Julep.

THESE Medicines will admirably well a-
gree in Caſes where the Blood is much impo-
veriſh'd and weak, from a craſie Conſtitution,
or where the Spirits have been broke by
the Violence of Nephritick Paroxiſms. But
in Perſons of an active lively Diſpoſition:
We muſt endeavour, by all Means, to ſupport
and preſerve that Native Vigour, of very
great Conſequence in the Cure of both Stone
and Gravel. Therefore, in ſuch Caſes, I prefer
Volatile Salts, as beſt for the Baſis of a Me-
dicine.

R̄ Coral. Rub. pptt. Marg. pptt. Teſt.
Ovor. pptt. ʒii. Sal. Volat. Suc. ʒi. Croc. Pulv.
ʒβ Ol. Nuc. Moſch. gtt. vi. m. in Chart. viii.
Divid. Capt. 1. Mane Hora ſta, & Nocte 7a
ſingulis Diebus ſuperb. ʒβ Emulſionis ſeq.

R̄ Amig. Dulc. excort. ʒiβ Sem. Papaver.
Alb. ʒi. contunde quam optime in Mort.
Marm. Senſim affund. Aq. Hord. ʒβ cui ad-
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de Aq. Nephritic. ꝑß Spt. Nitr. Dulc. ʒii.
Sachar. Alb. ʒvi. m. f. Emulsio.

Rx Sal. Volat. Oleos. Tinct. Castor. Spt.
Lavend. ana ʒii. m. Gut. 40 in Haust. Vin.
Alb. Mont. sæpius in Die.

If upon Extraction of Blood, I perceive the Mass already over-rich; I then order the Patient every Night and Morning to load his Stomach with new Whey for a Month; which will both wash the Stomach, scour the Intestines, and attenuate and dilute the Blood. And, in the mean Time, let him be more sparing in the Use of the Testacious Pouders. In such Cases the following Prescriptions will be most prevalent.

Rx Marg. pptt. Crem. Tart. Tart. Vitriol.
ana ʒiß Sachar. Alb. ʒii. m. in Chart. 6. Di-
vid. Capt. Pulv. Mane que Nocte de Die in
Diem super b. copiose feri Lactis. Vel,

Rx Coral. Rub. pptt. Salis Prunellæ Tart.
Vitriol. ana ʒii. Spec. Diamb. fine Od. ʒß m.
Pulv.

THESE Medicines I have thought most proper as Alteratives, to remove the Acidity and Sharpness of the Blood, which frequently excite those Symptoms, an overliberal

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ral Use of the stronger Diureticks were suppos'd to bring upon the Patient. But, this observe, That no Prescription can be form'd with that Certainty, but what will be liable to particular Alterations, as different Symptoms shall arise; and ever take Care; if the Patient be subject to any other Disease, as Asthma, Cholick, Gout, &c. so to ward against these Inconveniencies, that they give no Disturbance, while the main Force of Medicines are employed in order to a Dissolution of the Stone.

Now if by proper Vomits, we have freed the Stomach of its vicious Contents, restor'd its Tone; and given a due Tensity to all its Fibers, which is, or ought to be, the proper Action of all Vomits: If the purging Medicines have clear'd the lacteal Vessels, cleans'd the Intestines, and made an easy and free Passage to all the Excrements. If the Alteratives have reduc'd the Blood to its true natural Consistence and Balsamickness; and, in a Word, if all the natural Digestions perform their proper Functions according to Order, as certainly they might, if due regard be had to the particular Rules and Methods I have here prescrib'd, then in the next place, we are to proceed to the Method of Dissolution: And, I can be bold with the most powerful Diureticks, and that for a con-

siderable Time, after I have thus prepared the Blood for their Reception, and neither Stranguries, nor Suppressions of Urine, shall ensue upon their Use. And, tho' the Blood, upon their Continuance, shall flow to the Kidnies in a much more rapid Course, and in greater Plenty, than at other Times; yet, now, its Acredness and Sharpness being remov'd shall come, without inferring any Disorders to those Parts; and, evident it is, that for Want of this due Preparation of the Blood, most of those Symptoms arise, the Antients complain'd, were caus'd from an over-liberal Use of the stronger Diureticks.

THE Apparatus towards a Dissolution being now compleated, we must proceed to the Election of the most proper Dissolvents, that may best suit the different Temperaments of Bodies: For, we are to consider, that the same Medicines that will dissolve the Stone in one Subject, shall fail of that Operation in another. Fix'd Salts best agree in corpulent Bodies: They are warm Medicines, and greatly promote the Fusion of viscid Phlegm, that gross Constitutions very much abound with. They are Creatures of the Fire, and contain sharp spicked Points, which having no Viscosity to sheath them in, are apt to fret the tender Membranes of the Kidnies, and cause Stranguries; but, when the Body

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is thus prepared, seldom does any of these Accidents happen.

THE following, I prescrib'd my Father, with great Success, when he was near Seventy Years of Age.

Rx Sal. Tart. ℥ii. Milleped. pptt. ℥i. Borac. Venet. ℥β. Croc. Pulv. gr. vi. m. Pulv. capt. sing. Mane cum ℥iv. seq.

Rx Mucilag. fact. ex Sem. Cydon. ℥β, ℥xii. Aq. Peon. C. ℥ii. Spt. Nitr. Dulc. ℥ii. m. f. Mixtura.

MY Father, when he took these Medicines, labour'd under the Stone in his Bladder. He continued them a Month, without any considerable Accidents attending him; except, sometimes, a little Pain about the Os Pubis. He, always, upon taking the Powder, rid two or three Miles, which greatly promoted their Operation, and made him Urine in large Quantities. He voided several Fragments of the Stone, some Pieces as big as a Horse-Bean: But, his Age being so far advanc'd, I would not attempt a Dissolution.

THE following is a most sovereign Lithon-
triptick, and, I believe, a more powerful Dis-
solvent is not yet known to Mortals.

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R \acute{e} Sal. Tart. \mathfrak{z} i. Aq. Saxifrag. $\mathfrak{f}\mathfrak{f}$. fiat Dis-
sol. & filtretur.

R \acute{e} Vin. Canarin. $\mathfrak{f}\mathfrak{f}$ Croc. Brit. $\mathfrak{z}\mathfrak{f}$ Opii
crud. \mathfrak{z} ii. Ol. Nuc. Moschat. gtt. xxx. m. f.
Tinct.

R \acute{e} Spt. Vini rectificati \mathfrak{z} iv. Camphor. \mathfrak{z} vi.
Cantharid. pptt. $\mathfrak{z}\mathfrak{f}$ Spt. Nitr. dulc. \mathfrak{z} i. m.

THESE three Liquors, after they have
stood their proper Time in Digestion, let
them be filter'd, and very well united toge-
ther in a Glass Bottle. Dose is, one Spoon-
ful in the Morning fasting.

THIS is a most excellent Medicine, and
dissolves all Stones, possible to be dissolv'd,
and evidently carries off the Fragments by
Urine.

I HAD the following Medicine communi-
cated to me from a Gentleman, who did aver,
that the Remedy had dissolv'd a considerable
Stone in the Bladder, of a Gentleman who
had long labour'd under the same, and forc'd
it away in great Quantities, with the Urine.
The Probity, and Honour, of the Person I had
it from, made me not doubt of its Effects.

R \acute{e} Mil-

℞ Milleped. pptt. ℥ii. infunde in Ol. Vitriol. Dulc. ℥iv. dig. simul Diebus 3. postea Arena callida evaporetur ad siccitatem. Dosis ℥i. ad ℥i.

OF this Remedy the Patient took a Dram, in Powder, every Morning, in a Draught of plain Posset-Drink, and drank a Draught of the same after it; and in less Time than a Month, he found, to his great Satisfaction, this mighty Operation perfected, and, that, without any dismal Symptoms accompanying it. He commonly walk'd half a Mile after he had taken it, and, frequently, could perceive the Stone to juttle against the Neck of the Bladder; which, at last, was happily dissolv'd, and came away in great Loads of Gravel, and little Fragments.

HIERON. Mercurialis, in his Practice, gives us the following, as the most approv'd, Remedy, in his Time; and, which, he declares, was confirm'd by the Experience of many.

℞ Vitri combusti pptt. ℥x. Scorpion. ust. ℥v. Verm. terrest. ust. ℥iii. Sem. Fænic. Apiana ℥ii. Dauc. ℥iiss Sang. Hirc. pptt. ℥iiss. Terrantur omnia diligentissime, & f. Pulvis. Dose ℥ii. to

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℥ii. to ʒi. in a Glass of White Wine in the Morning fasting; and repeat it every Day.

I must confess, I cannot understand the Reason, why this Gentleman orders burnt Glass, since Vitrification is the last Action of Fire; into which, all fix'd Bodies in the Globe, are ultimately resolvable; and cannot, after that, receive any further Change from the Fire. Therefore, I think, the Glass taken and simply pounded in a Mortar, and, after that, reduc'd, by Levigation, into an impalpable Powder, might do as well without Burning. I must beg Leave here to speak a Word in favour of the Powder of Glass; That, seeing all other Matter affords their several Principles, it alone resists the Action of the most intense Fire, without Alteration of Substance, or Change of Quality: Therefore, if it contain any Power of breaking or dissolving the Stone, there is no Fear of its conveying its Stone-breaking Qualities to the Kidnies and Bladder; since, if the Action of Fire will not affect it, we may reasonably believe no Pressure of the Stomach, nor Dissolution of the Juices, will be able to make any Alterations in its Qualities; so that here we have a Medicine, which obviates that Difficulty some People have been so much perplex'd about, *viz.* That no Medicine, with its Specifick Virtues, can be convey'd to the Kidnies; because,

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cause, the Juices of the Body would destroy them in its Passage, or, at least, so impair them, that they would not be able to effect much, when they come to operate upon a Stone in the Bladder.

BUT, this observe, that if any severe Symptoms of the Stone should attack the Bladder, while Medicines are employ'd, in order to its Dissolution, we must immediately forbear the Use of all violent Diureticks, till those Symptoms are, by Anodines and Balsamicks, made easy again. For, this know certainly, that all Diureticks, especially the stronger Sort, are pernicious, while the Symptoms continue to rage and vex the Patient. But, as this Accident does not often happen, where the Body has been prepar'd according to the Directions I have given; so, I suppose, this cautious Hint will be sufficient to warn every one, from being too bold in the Administration of Lithontripticks, before such a previous Preparation of the Body has preceded.

IF the Stone happen, by Virtue of any of the foregoing Medicines, to yield to a Dissolution, the Diagnostick Signs will be evident. The Urine is puddley, thick, and muddy; the Sand appears in the Urinal evidently to settle; great Pains immediately precede a Dissolution. To remedy which, we must have
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Recourse to Balsamicks, and gentle Anodines, join'd with Diureticks, to ease and relieve the Pains, and to evacuate what Fragments, and Gravel, may not naturally come away with the Urine.

R \acute{e} Pulv. Haly \mathfrak{z} ii. Coral. Rub. pptt. $\mathfrak{z}\beta$
Camphor. gr. iii. m. f. Pulv. capt. i. Mane-
que Nocte superb. Coch. iv. seq.

R \acute{e} Aq. Lact. Cerasor. Nigr. Aq. Nephritic.
ana \mathfrak{z} iii. Sal. Volat. Oleof. \mathfrak{z} i. Syr. Balsam. \mathfrak{z} i.
m. f. Julep.

THESE will serve to ease the Parts, and prevent Gravel, and the Fragments of the Stone, from wounding the tender Membranes of the Bladder; and to render them more efficacious, we may add the following.

R \acute{e} Syr. Papaver. Errat. Syr. de Mecon. ana
 \mathfrak{z} i. Ol. Amygd. Dulc. \mathfrak{z} ii. Balf. Gilead. \mathfrak{z} i. Pe-
ru gtt. x. Sacch. albissim. \mathfrak{z} iii. m. Lync \acute{e} us
capt. Cochlear. i. 4ta quaque Hora superb.
Coch. 6. seq.

R \acute{e} Deco \acute{c} t. P. Syr. de Alth. $\mathfrak{f}\beta$ i. Aq. Nephri-
tic. \mathfrak{z} iv. Syr. de Alth. \mathfrak{z} i. m. Deco \acute{c} t.

WHEN all the little Fragments, and Gra-
velly Concretions, are come away from both
Kidnies

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Kidnies and Bladder, as a Means to strengthen and restore the Renal Glands, and prevent the Generation of any more, it will be absolutely necessary, that the Patient close the Cure with the following Method.

First, If he be of a biliose, hot Constitution, and subject to Costiveness, as most calculous Persons are, let him, once a Month, the Year round, take a Vomit of the Rad. Ipecacuhan. or some other that may best suit his Constitution. Then, to cool his Body, and relax his Bowels, let him, once a Week, take an Ounce of fresh extracted Casia, or Lennitive Electuary, join'd with a little Cream of Tartar, or, as preferable to all, an Ounce of Manna by itself: And, those Days he does not take his opening Medicines, let him go on with the following.

R \acute{e} Terebinth. \acute{e} Chyo $\mathfrak{z}\beta$ Pulv. Gum. Oliban. Mastic. Suc. alb. pptt. ana $\mathfrak{z}\mathfrak{i}$. Gum Arabic. $\mathfrak{z}\beta$ m. Pill. Mas. f. Art. \acute{e} $\mathfrak{z}\mathfrak{i}$. N $^{\circ}$ xii. de quibus capt. quinque Maneque Nocte superb. Coch. 4r. Julep. seq.

R \acute{e} Aq. Sperm. Ran. Germ. Querc. Plantag. ana $\mathfrak{z}\mathfrak{iii}$. Aq. Gentian. compt. $\mathfrak{z}\mathfrak{iii}$. Syr. Cydon. $\mathfrak{z}\mathfrak{i}\beta$ Spt. Lavend. C. $\mathfrak{z}\beta$ m. f. Julep. Capt. Coch. 4r. omni Dosi Pillularum.

WHILE these things are doing, he may make Use of the *Cold Bath* twice a Week, and go on with a Milk Diet two or three Months; and, for his Diversion, he may use gentle Riding, of very great Service to the Body in most calculous Cases; and, when all his Pains have entirely left him, the Spaw-Waters will be a Remedy second to none, by way of Prevention.

I COULD prescribe several other singular Medicines, of great Efficacy in the Stone; but these, I have here inserted, are the most potent Dissolvers, and will answer any Indication, where a Cure can be expected.



*The Case of Thomas Rumley; of
Penrith.*

I BELIEVE the following Relation will be surprizing to every Body, and I should myself have misdoubted of it, had I not had the Fact related from the Man himself who suffer'd it, and the Circumstances attested and confirmed by several Persons of the best Note, in the Place where he liv'd.

. THIS unhappy Person, was some Years ago, most violently attacked with an inexpressible Pain about the Region of the Groins, a Strangury accompanying it, that caus'd most dismal Complaints, which so disturb'd the Neighbours round about, that they mov'd the Parish he might be convey'd to an Hospital (being but poor) a little distant from the Town, where Sustainance, Physick, and what might be judg'd necessary, should be sent him. In the mean time, all the Physicians, Apothecaries and Surgeons, concluded it must be the Stone. But no skilful Lithotomist being in those Parts, he was obliged to linger on, till at last a Tumour arose near the Region of the *Penis*, which separated and broke, at which issued out a great Quantity of fætid Pus, and two or three Days after little Stones came away, after them

those bigger than a Filbird, and some as big as a Chesnut, two which he shew'd me, were as big as a Walnut, of a Chalky Lime Colour, and one which he aver'd came away from him at the same Orifice, was as large as a Hens Egg, a thing incredible, were not the Fact so strongly supported by the Testimony of several very credible Witnesses. But this Relation I only offer to the Consideration of the Curious, that they may be satisfied of the active Endeavours of Nature, in exerting her Power to fling off all Annoyances that may any way disturb her Opportunity.

I SHALL now consider the Case of a reverend Gentleman long distress'd with the Stone and Gravel.

*The Case of the Reverend Dr.
Willechamp.*

THIS Gentleman about the 12th of Octob. 1721. sent for me, he then living in *Pall-Mall*, and grievously afflicted he was with the Stone, but in what Part, I could not so easily determine. His first Complaint was, of a Strangury, very painful to him in making Water. A bearing down upon his Seat every time he went to Stool. All the Urine he could make was by Spoonfulls, or sometimes a few Drops, and that with great Distress
and

and Striving. His Appetite was quite gone, and he could eat little and that upon Force. He was much subject to Windyness and Chollick Pains, and would often belch up an acid Gass from his Stomach. That the most of his Pain lay a little above the *Os Pubis*, on the Right Side. That he had made several times bloody Urine, in which would appear little Flakes, like the thin Parings of Leather. That having seen my Treatise upon the Stone, he was very desirous of my Advice, and implored me to give him the best Assistance I could.

Explanation of the Case.

Who ever will give themselves the Trouble to look into the 51st and 52d Pages of this Book where I treat of the Cause of the Stone, will there perceive, I insist upon Study and Pensiveness to be frequent Causes: And in this very Case I am writing of, they both join'd Forces and gave a helping Hand to consummate his Misery. For I believe few Gentlemen ever apply'd themselves with more constant and long Watchings to their Studies than himself, whereby he had almost ruin'd a brave, sprightly, brisk and vigorous Constitution of Body. After I had more narrowly examined the Symptoms that oppress'd him, I easily concluded from a Paroxism, he had but lately suffer'd, that it most certainly

was the Stone ; but whether in the Bladder or not, I could not very well determine, tho' I fear'd very much, it might be fix'd in the oblique Insertion of the Uriter, where it penetrates the Bladder ; and what mov'd me to this Opinion, was, the Case of a Gentleman about three Years ago, who died of the Stone, and when open'd, there appeared a large Stone, fix'd so, that it could no way be mov'd out. And I had great Reason to fear, that this Gentleman's Case did too much resemble that in all its Symptoms. But to raise his Spirits, and keep his Mind as easy as possible, which was greatly disturbed and perplex'd with deep Thoughts and Despair of a Cure, I exhorted him to be chearful, and assured him, I would give him all the Satisfaction he could reasonably desire in a Case so intricate and perplexed ; and did assure him, that the Stone, whether in the Uriter or Bladder, could not be very large ; for no Stone is large, where no Weight, as it were, bears down or presses upon the *Perinaum*.

Cure of the Symptoms and Distemper.

It not often happens that the Stone comes away in the first Paroxysm, unless it be in the Bladder ; but as he was grievously handled, I had some Reason to apprehend, that the Stone or Gravel would be excern'd before the Paroxysm

Paroxifm was over. As his great Dejection of Spirits, and Constitution broken by frequent Watchings and long Studies, had render'd it a Cafe very complex, fo I fear'd little Relief could be given him, but from Medicines gentle and eafy of Operation, and fuch as might contribute to the reftoring of the injured Parts at the fame time they were preffing upon the Stone, in order to its Expulfion or Diffolution, in cafe it fhould prove rebellious : Therefore to animate his drooping and dejected Spirits, and raife the languid beating of his Pulfe, I order'd, for him, the following Prefcription.

R \acute{c} Amigd. Dulc. excort. \mathfrak{z} i. fem Papaver. Alb. \mathfrak{z} vi. Peon. M. $\mathfrak{z}\beta$ Contunde quam optime in Mortar. Marmor. fenfim affundendo $\mathfrak{h}\mathfrak{b}\mathfrak{i}\mathfrak{\beta}$ Aq. Cerafor. Nig. cui adde Spt. Ejusd. \mathfrak{z} vi. Spt. Nit. Dulc. \mathfrak{z} ii. Syr. Balf. \mathfrak{z} ii. m. Emulfio, bibat copiofe, in Lang.

R \acute{c} Chel. Canc. pptt. Oc. Can. pptt. ana \mathfrak{z} i. Spec. Diamb. five Od. $\mathfrak{z}\beta$ Croc. Salis Succin. ana gr. iii. im. Pulv. σ ta. quaque Hora fumendus in Coch. iii. Julap. feq.

R \acute{c} Vitel. Ov. noviter pullulatum Vin. Canarin. $\mathfrak{h}\mathfrak{b}\mathfrak{\beta}$ ol. cin. Nuc. Mosch. ana gtt. iiii. Syr. Crocin. \mathfrak{z} i β m. Julap.

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℞ Vin. Mont. ℥i. Spt. Salis Arm. ℥ii. m.
bibat. Cyathum Subinde.

THIS Prescription he continued a Week, with very great Advantage, and tho' he sometimes complained the Medicines were too hot for his Body, yet I perceiving no Symptoms of a Fever, order'd him a Glister, and exhorted him to continue them till the 24th of *October*, at which time complaining of his Pain, and that his Body was costive, his Stomach uneasy, I order'd the Glister to be repeated, and the following Draught.

℞ Man. opt. ℥i℥ fiat Dis. in Aq. Ceras. Nig. ℥iii. cui adde Aq. Nephritic. ℥vi. Ol. Amigd. Dulc. Syr. Alth. ana ℥℥ m. f. Haust.

THURSDAY October 29. I was to visit him again, and his Complaint then was, he did not take any Sleep, and that he perceiv'd his Pain he thought to move a little lower. I was resolv'd to take the Advantage of this fair Opportunity, and therefore prescrib'd him the following.

℞ Aq. Cerasor. Nig. ℥iii. Aq. Theriac. ℥℥ Tinct. Nephritic. ℥i. Syr. Papav. erratic. Ol. Amig. Dulc. ana ℥℥ Pill. Matth. gr. xii. m. f. Haust. sing. Nocte sumendus.

℞ Aq.

R $\&$ Aq. Cerafor. Nig. ℥iij Aq. Peon. C. $\text{℥}\beta$
Spt. Nit. Dulc. ℥i . Syr. Balf. ol. Amig. dulc.
ana ℥vi . Ent. Ven. ℥i . m. f. Haust. sing. Auro-
ra fumendus Superb. Copiose Lactis Amigd.

HE had not continued this Formula three Days, before he made bloody Urine of a deep Colour, and in it some Particles of clotted Blood; however, as his Pains were tolerable, I order'd him to continue his Medicines sometime longer, not knowing how to alter them for the better: In the mean time, he daily excern'd much Gravel, and many little gritty Substances, or Fragments of Stones; at last a large Stone came away, which when I came to view, it was near an Inch long, from End to End, and from which I believe the other little Portions of Gravel had broken; of which if we suppose altogether, must have form'd a Stone of a very large Surface. I order'd him the following, and so dismiss'd him as well and easy as he reasonably could expect, considering the Weakness of his Constitution.

R $\&$ Gum Tracaganth. purissimi, selectissimi
& a. sordibus purgatissimi ℥i . Aq. Rosar. Damas. ℥bi . Nuc. Mosch. ℥i . Sachar Albissimi
Pulv. ℥i . m. stent. simul. donec. in Crassitudi-
nem Pulpæ. ineat. Capt. Quantitatem Cochl.
Majoris

majoris ter 4ter. ve in Die superb. Coch. 6. sequent.

R \acute{e} Aq. Germ. Querc. Cin. Hord. ana ꝑß
Aq. Peon. Comp. ꝑvi. Syr. Balf. ꝑiß. m. Julep.

BUT altho' my own Reasoning upon the Circumstances of the Symptoms, and the Event of Things plainly indicated that the Method I used was the only way to relieve this unhappy Gentleman; yet a Physician long inur'd to Practice, (and who, if common Fame belie him not, is notorious for slipping Stones into the Urinal of the Patients, and then perswading them that they come away by Vertue of the Medicines he prescribed) boldly asserted, that all the Medicines I had order'd, might as well have been applied to a sore Eye, or lame Foot, as to the Stone; and would have been equally as successful in the one, as the other. This is the Result of their Reasoning, whose little Judgments and narrow Thoughts, cannot conceive the Difference between restoring the Constitution of the several injured Parts, and enabling them thereby to sling off a Disease, and forcing it off from the Parts it possesses by the mere Force of Medicines. Certainly the latter Way in weak Constitutions must be attended with such monstrous Hazards, as would be Madness to attempt; for the stronger Diureticks

ureticks would make such Ravage, by tearing the Vessels, and increasing all the Symptoms as could end in nothing else but the Destruction of the Patient: While in the other Case, all is done with the greatest Ease, Safety, and Satisfaction imaginable; no Stress being put upon the Parts, but what the restor'd Springyness of the Vessels acts by Consent upon the Stone, in expelling it out of the Body.

I HAD not here taken Notice of this Affair, but that he endeavour'd by a most ungenerous Detraction, after a base and scandalous Manner, to bring me into Disrepute with this very Gentleman who at that time was my Patient; but he look'd upon it so pitiful a way of proceeding, that he inform'd me himself of the whole Matter.

The Case of Mr. Clayton, Distiller, in Thames Street.

But tho' I got pretty well over with the former Case, yet the following would not yield so easily to Medicines; and I was attended with more Difficulty in the Management of its rebellious Symptoms.

THIS

THIS Person sent for me about the 11th of *March*, 1722. and when I came to examine him, his Case was more like an Asthma than any thing of the Stone or Gravel; but upon Inquiry into the Circumstances of his Illness, I was given to understand, that his first Complaint was, of a fix'd Pain about the Region of his Loins, which for some time was pretty endurable, but being troublesome, he was advis'd by a Neighbour, to drink every Night half a Quartern of Gin to put it away, which observing to do, instead of getting rid of his Enemy, it was so audacious, as to ascend up to his Stomach, and put him to that Torture, that he could neither sit, rise, stand nor go, without very exquisite Pain; and whatever he eat or drank, was sure to be rejected by Vomit; and his Breast also, had such a Restriction drawn over it, as if it had been barr'd about with an Iron Hoop, which shorten'd his Breath, that he was afraid of being strangled.

Explanation of the Case.

I IMMEDIATELY concluded, that the Seat of his Disease was his Kidnies, and that the Increase of the Symptoms, *viz.* his Vomitting and Sense of Suffocation, proceeded from the Geneva he had taken.

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Cure of the Symptoms and Disease.

March 11. 1722.

FIAT Venesæct. in. Brachio & detrahatur
sanguinis ℥x. quamprimum
Applic. Emplast. Epispastic. Amplum &
Acre inter scapulas. Hora Somni.

Rx Decoct. Commune p. enem. ℥x. Tere-
binth. Venit. in Vitello Ovi. dis. ℥i. ol. Junep.
℥ii. m. Enem. quamprimum Injiciendum &
post Reditum Enematis Capt. sequent.

Rx Elixir. Salut. ol. Lin. f. igne. ext. a. ℥vi.
Syr. Rosar. Salut. ℥β Spt. Nit. Dulc. gtt. xx.
m. f. Hauft.

BUT he had no sooner taken this Draught,
but it return'd by Vomit.

March 12. 1722.

THIS Day finding that his Vomitting con-
tinued, tho' his Breath was better, I order'd
him to be got into a warm Bed, and an Hour
after to have the following.

Rx Pulv.

R \acute{e} Pulv. Chel. 69. C. \mathfrak{D} i. Theriac. And.
 \mathfrak{D} i. Sal. Absinth. gr. x. L. Lond. gr. ii.
 m. f. Bol. statim sumendus cum Haust. seq.

R \acute{e} Aq. Ceraf. Nig. \mathfrak{z} ii. Aq. Peon. C. \mathfrak{z} vi.
 Syr. Crocin. \mathfrak{z} iiii. Spt. Salis. Arm. gtt. xvi.
 m. f. Haust.

HE took this about an Hour after the last Vomitting, when the Disorders of the Stomach were appeas'd; but in a Quarter of an Hour it underwent the same Fate, and was also cast up as the former.

IN short, I order'd him every Medicine I could think of, that I thought would any way be serviceable in his Case: As the Sal. Absinth. & suc. Limon. with twenty Drops of Liquid Laudan, but all to no Purpose; and finding him no better, I at last had recourse to the following, which is greatly commended by *Fabritius Hildanus*, and is also taken Notice of by *Gregorius Horstius*.

R \acute{e} Cæpar. Ust. quantum satis counjude
 quam optime in Mortar. ut in formam
 Cataplasmi. redactæ sint. & calide Applic.
 toti Abdom.

THIS

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THIS was the first Application that gave him any considerable Relief; and its impossible to conceive, the Loads of Gravel that came down by Urine.

I THEN gave Orders for repeating the Cataplasim, and order'd him the following Draught, to gain a clear Passage.

R \acute{e} Elix. Salut. \mathfrak{z} i β Ol. Lin. \mathfrak{z} i. Syr. Rosar. Salut. \mathfrak{z} vi. Spt. Nit. Dulc. gtt. xxv. m. f. Hauft.

AND at Night to compose his Spirits, the following.

R \acute{e} Aq. Ceras. Nig. Aq. Lact. ana \mathfrak{z} i. Aq. Peon. Compt. \mathfrak{z} vi. Laud. Liquid. gtt. xx. Syr. Papav. errat. \mathfrak{z} i. Sal. vol. ol. gtt. xxv. m. f. Hauft. Hora som. singulo Nocte fumendus.

March 15.

HE appear'd pretty easy, having had a good Night.

March 17.

HE repeated the Cataplasim, and voided much Gravel, and some very small Stones, but
with

with little Difficulty. He continu'd the Use of these Remedies, till the 30th, and finding himself very easy and well, left all off, and return'd to his Business again. I observe, that this was a Case where the Gravel was only in Fault, and as I have not taken Notice of one Case where the Gravel alone was the Subject of the Disease, so I hope this will not be unacceptable to the Reader's Perusal.

AND thus I absolve this Discourse, which hath been the Basis of my Practice, in the Cure of this Disease, ever since I have had the Honour to be of the Profession; and, which I now publish, for the Welfare, and Benefit, of Mankind; not seeking my own Profit, but the common Advantage, and real Good, of all who may Labour under this Affliction.





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